

**U.S. Department of the Interior  
Bureau of Land Management  
Little Snake Field Office,  
455 Emerson St.  
Craig, CO 81625**

**Finding of No Significant Impact (FONSI)  
DOI-BLM-CO-N010-2013-0030EA**

**BACKGROUND**

The Proposed Action is to approve the Little Snake Field Office and Browns Park National Wildlife Refuge Fire Management Plan. This plan, known as the Northwest Colorado Fire Management Plan (NWCMP) is a strategic plan that implements decisions found in the Little Snake Record of Decision and Approved Resource Management Plan (ROD/RMP), (October 2011) and the Northwest Colorado Greater Sage Grouse Resource management Plan Amendment (September 2015). It provides specific details of the fire program, including organization, facilities, equipment, activities, timing, locations, and related costs. This plan directs fire management activities for fire and resource personnel to improve protection of human life and property through fire protection, reduction of hazardous fuels, and restoration of fire adapted ecosystems. This management direction may be updated as a result of approved amendments to the Little Snake RMP or other related planning documents. Each year adjustments will be made to the plan to reflect changes in the annual planning process. The NWCMP is also meant to be a working reference for fire program information.

The EA has been prepared by the BLM to analyze alternative configurations of fire management polygons within the LSFO. The selected alternative will then be used as a basis for updating the LSFO portion of the NWCMP.

**SELECTED ACTION**

Two alternatives were evaluated in the EA, including the Proposed Action and the No Action Alternatives. The Proposed Action is to revise the fire management polygons and to update and implement the LSFO portion of the NWCMP. The immediate purpose of this Fire Management Plan is to provide managers in the Northwest Colorado Fire Management Unit with a functional document to help them integrate fire management with all other resource management programs in the LSFO. Management direction is organized within the FMP by twenty land area subdivisions called fire management units (FMUs).

Wildfire management objectives and actions are presented in the Proposed Action Alternative. Wildland fire suppression is considered unplanned and does not undergo site-specific NEPA analysis due to unknown location, size, and timing of the event. Prescribed fire and non-fire fuel treatments are considered planned actions and must undergo site-specific NEPA review and analysis prior to implementation.

Under the No Action Alternative, continued implementation of the 2000 NWCMP and EA would occur. The No Action Alternative represents current fire management direction as

outlined in the 2000 Little Snake FMP (BLM 2000). Although the 2000 plan prioritizes protection of life and resources, it contains fewer fuels management goals and opportunities for wildland fire to benefit ecosystems. In addition, the 2000 FMP does not comply with current Federal Wildland Fire Management Policy.

The No Action Alternative has similar goals such as protection of life, protection of resources, and cost efficiency, however, it does not incorporate management decisions made in the Little Snake ROD/RMP. Under the No Action Alternative, the role of wildland fire management in the ecosystem is not in conformance of the current RMP and does not include latest information on all resource protection measures. One of the current resources protection measures includes Greater sage- grouse general and priority habitat management zones within the LSFO boundaries. These sage-grouse management zones would not be adequately addressed in fire management with the No Action Alternative.

National fire direction states that all FMPs need to be in the new national FMP template; therefore, under the No Action Alternative, the 2015 NWCFFMP would be updated using the new template, but the management boundaries (polygons), would remain the same.

#### **FINDING OF NO SIGNIFICANT IMPACT**

Based upon a review of the EA and the supporting documents, I have determined that the Proposed Action is not a major federal action and will not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity, as defined at 40 CFR 1508.27 and do not exceed those effects as described in the Little Snake Record of Decision and Approved Resource Management Plan (2011). Therefore, an environmental impact statement is not required. This finding is based on the context and intensity of the project as described below.

#### **Intensity**

The following discussion is organized around the 10 Significance Criteria described at 40 CFR 1508.27. The following have been considered in evaluating intensity/severity of the impacts anticipated from the implementation of the 2015 NWCFFMP. With regard to each:

#### **1. Impacts that may be both beneficial and adverse.**

Implementation of the Proposed Action will result in some adverse impacts; however, the overall benefit of the project, particularly a revised decision making process and prompt fire management response, outweighs these negative effects. The adverse effects are summarized as follows: negligible to moderate adverse and beneficial impacts of the preferred alternative will occur to air quality, water quality, geological resources, wilderness characteristics, vegetation and wetlands, fish and wildlife, threatened and endangered species, visitor use and experience, cultural resources, and socioeconomic resources. Implementation of the NWCFFMP will be an overall benefit to LSFO BLM resources in the long-term.

**2. The degree to which the Proposed Action affects public health or safety.**

Firefighter and public safety is the first priority in the development of an FMP. In light of this, numerous mitigation measures will be implemented related to human health and safety. Only fully qualified (i.e. meeting National Wildfire Coordinating Group qualification and accepted interagency knowledge, skills and abilities for the assigned fire job) personnel will be assigned fire management duties. No operation will be initiated until all personnel involved have received a safety briefing describing known hazards and mitigating actions, current fire season conditions, and current and predicted fire weather and behavior. Wildland fire incident commanders will minimize firefighter exposure to heavy smoke when possible. Adjacent land owners, local residents and the public will be notified of all fire management events that have the potential to impact them. The authorized officer may, as a safety precaution, temporarily close parts of the public lands managed by the LSFO-BLM to the public. With all of these measures in place, adverse effects on health and safety will be minimized.

**3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

As described in the EA, negligible to moderate effects to cultural resources were identified for the Proposed Action. The possibility of disturbing currently un-mapped and un-surveyed sites exists, although this possibility would be small. Mitigation measures to protect cultural resources would be employed during project implementation and are described in the EA. Wetlands would be avoided during treatment under the Proposed Action. The Proposed Action does not include planned fire management activities that would affect any ecologically critical areas, wild and scenic rivers, prime farmlands or other unique natural resources, as referenced in the Wild and Scenic Rivers Act, Management Policies, 40 CFR 1508.27 or the criteria for national natural landmarks.

**4. Degree to which the possible effects on the quality of the human environment are likely to be highly controversial.**

The Proposed Action's overall effects on the human environment would be beneficial as a result of the reduction of wildfire risk and maintenance of natural fire regimes, and thus not likely to be controversial. Implementation of the Proposed Action would not have a significant adverse effect on key resources or values and would be unlikely to generate any effects on the human environment that would be highly controversial.

**5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risk.**

As previously described, risks involved under the Proposed Action alternative relate to firefighter and public safety. Mitigating measures employed will reduce the effects to public safety and have been effective in other instances. Therefore, there are no highly uncertain or unique or unknown risks identified.

**6. Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**

Federal Wildland Fire Management Policy requires that all federal agencies that manage lands with vegetation capable of sustaining fire to develop a wildland fire management plan. The plan should meet the specific resource management objectives for the public lands and ensure firefighter and public safety is not compromised. These guidelines further state that all non-structural fires occurring in the wildland are classified as either planned ignitions or unplanned ignitions. Fires may be authorized by an approved wildland fire management plan and contribute to the public land's resource management objectives. The Proposed Action neither establishes a BLM precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

**7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

No major (significant) cumulative effects were identified in the EA. Impacts of the Proposed Action on air quality, water quality, geological resources, wilderness, vegetation and wetlands, fish and wildlife, threatened and endangered species, visitor use and experience, cultural resources, and socioeconomic resources were identified. As described in the EA, cumulative impacts were determined by combining the impacts of the Proposed Action with other past, present and reasonably foreseeable future actions. The impacts of other past, present and reasonable foreseeable future actions on resources, in conjunction with the impacts of the Proposed Action, will result in both beneficial and adverse cumulative impacts ranging in intensity from negligible to moderate. Therefore, the Proposed Action will not contribute or result in significant cumulative impacts.

**8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

Based on previous and ongoing cultural surveys and through mitigation by avoidance, no adverse impacts to cultural resources were identified or are anticipated. There are no known American Indian religious concerns or person or groups who might be disproportionately or adversely affected as anticipated by the Environmental Justice Policy.

**9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973.**


Impacts on federally protected species under the Proposed Action will be negligible to minor, short to long-term, and adverse or beneficial. It is unlikely that any federally protected species would be harmed by fire management activities, and may benefit from post fire conditions. Some displacement due to fire management activity, habitat loss and degradation would occur, although impacts would be short-term and not jeopardize continued existence

of species. Short-term benefits would also occur from managing vegetation and habitat for natural resource objectives. Habitat could be enhanced or created, and likely to have long-term benefits to listed species. Avoidance measures and mitigation would be used to protect federally listed species. The use of a monitor or point/zone protection response strategy would provide beneficial effects by allowing natural processes to perpetuate so natural ecological function would be maintained and restored on more acreage of public lands.

**10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.**

Neither the Proposed Action nor the No Action Alternative would violate any known federal, state, local, or Tribal law or requirement imposed for the protection of the environment. During the public and agency involvement for this EA, state, local, and Tribal interests were given the opportunity to participate in the environmental analysis process. The Project is consistent with applicable plans, policies, and programs.

**SIGNATURE OF AUTHORIZED OFFICIAL**

  
Joseph Meyer  
Northwest Colorado District Manager

**DATE SIGNED:**

**U.S. Department of the Interior  
Bureau of Land Management  
Little Snake Field Office  
455 Emerson St.  
Craig, Colorado 81625**

**DECISION RECORD**

**PROJECT NAME:** NORTHWEST COLORADO FIRE MANAGEMENT PLAN

**ENVIRONMENTAL ASSESSMENT NUMBER:** DOI-BLM-CO-2013-0030-EA

**DECISION**

It is my decision to implement the Proposed Action in DOI-BLM-CO-2013-0030-EA, authorizing the revision and update of the 2000 Northwest Colorado Fire Management Plan (NWCFFMP).

**COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN**

This decision is in compliance with the Endangered Species Act, and the National Historic Preservation Act. It is also in conformance with the 2011 Little Snake Record of Decision and Approved Resource Management Plan and the 2015 Northwest Colorado Greater Sage-Grouse Approved Resource Management Plan Amendment.

**ENVIRONMENTAL ANALYSIS AND FINDING OF NO SIGNIFICANT IMPACT**

The Proposed Action was analyzed in DOI-BLM-CO-2013-0030-EA and it was found to have no significant impacts, thus an EIS is not required.

**PUBLIC INVOLVEMENT**

The Proposed Action in EA DOI-BLM-CO-2013-0030 was included in the NEPA log posted on the LSFO web site:

[http://www.blm.gov/co/st/en/BLM\\_Information/nepa/lso/register\\_2013.html](http://www.blm.gov/co/st/en/BLM_Information/nepa/lso/register_2013.html). This scoping has involved all federal, state, and local entities within the LSFO's land management area. The scoping included: U.S. Forest Service (Routt and White River National Forests), National Park Service (Dinosaur National Monument), U.S. Fish and Wildlife (Browns Park), Ute Tribes, Colorado Parks and Wildlife, Rio Blanco County, Moffat County, Routt County, Moffat County Sheriff FMO, Steamboat Springs Fire Protection District, Wilderness Ranch Home Owners Association, Greystone area land owners, Routt and Moffat County EMS, and the public. The external scoping has been accomplished through E-mail, phone calls, and meetings to discuss specific issues and concerns in adjoining lands. Browns Park area of concerns is about endangered plants and species in and along the Green River, and heavy involvement through the Grand Junction Ecological Services Field Office was needed. BLM has talked to and worked with Browns Park Refuge during this EA process. Ute Tribes were sent certified mail with the proposal of the FMP EA update; no comments were received from the Tribes as of December 28th, 2015.

**MITIGATION MEASURES:** Wildland fire suppression and associated wildfire prescribed vegetation treatments can have detrimental social, economic and environmental impacts. The FMP and EA outline measures and guidelines to reduce the negative effects of implementing the FMP.

**ADMINISTRATIVE REMEDIES**

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, 755 Parfet Street, Suite 151, Lakewood, CO 80215. Appeal and stay procedures are outlined in Form 1842-1.

The effective date of this decision (and the date initiating the appeal period) will be the date this notice of decision is posted on BLM's internet website.

It is my decision to approve the implementation of the NWCFMP as described in the Proposed Action of DOI-BLM-CO-2013-0030-EA.

**SIGNATURE OF AUTHORIZED OFFICIAL**

 2-3-16  
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Joseph Meyer  
Northwest Colorado District Manager

**DATE SIGNED:**

**United States Department of the Interior  
Bureau of Land Management**

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**Environmental Assessment  
for the Little Snake Field Office and Browns Park National  
Wildlife Refuge Fire Management Plan**

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Little Snake Field Office  
455 Emerson Street  
Craig, Colorado

DOI-BLM-CO-N010-2013-0030-EA

December 2013





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# CHAPTER 1 - INTRODUCTION

## 1.1 IDENTIFYING INFORMATION

PROJECT NAME: Little Snake Field Office and Browns Park Refuge Fire Management Plan/Northwest Colorado Fire Management Plan (NWCFCMP)

## 1.2 PROJECT LOCATION AND LEGAL DESCRIPTION

COUNTY AND GENERAL LOCATION: The planning area considered in this Environmental Assessment (EA) encompasses the entire Little Snake Field Office (LSFO) and Browns Park Refuge. It is comprised of Bureau of Land Management (BLM) lands and Fish and Wildlife Service (FWS) in Moffat County, and BLM lands in Routt, and portions of Rio Blanco County in northwestern Colorado. The planning area contains approximately 1,337,894 acres of BLM land, 12,070 acres of Browns Park FWS lands, 1,736,616 acres of Private lands, and 247,406 Colorado State lands.

LANDSCAPE DESCRIPTION: The Little Snake Field Offices encompasses a wide variety of vegetation types and topographical settings. The majority of BLM administered lands within the field office is comprised of rolling hills of sagebrush/grass, pinyon/juniper woodlands, or a mix of the two. Typical annual precipitation is between 10 and 12 inches with an elevation range of 5400 to 7200 feet. These are the areas that are most prone to wildfire occurrence. There is also a large area of lower precipitation salt desert shrub in what is known as the Sand Wash, Powder Wash and Vermillion Basins. Fires are rare in these areas as a result of sparse vegetation. Douglas Mountain, in the western portion of the field office, supports ponderosa pine intermixed with pinyon/juniper and sagebrush at elevations from 7200 to 8200 feet with annual precipitation in the 12 – 15 inch range. In the extreme northwest corner of the field office approximately 10,000 acres of predominately lodgepole pine exists in moderately steep terrain at 8500 to 9500 feet which has an average annual precipitation range of 14 to 18 inches. The scattered BLM land in the eastern part of the field office (mainly in Routt County) varies in elevation from 6800 to 8500 feet and is a mix of sagebrush at lower elevation, mountain shrub at moderate elevations and coniferous forest at higher elevation and on north aspects. This area also experiences infrequent fire occurrence.

Browns Park FWS land is comprised of the Green River riparian/wetlands along the river corridor with sagebrush/grass and juniper outside of the river corridor. The main acreage of Browns Park consists of low precipitation sagebrush and desert shrub where natural wildfire ignition is low.

## 1.3 BACKGROUND

The Northwest Colorado Fire Management Plan (NWCFCMP) is a strategic plan that implements decisions found in the Little Snake Record of Decision and Approved Resource Management Plan (ROD/RMP), October 2011 and the Northwest Colorado Greater Sage Grouse Resource Management Plan Amendment, September 2015. It provides specific details of the fire program, including organization, facilities, equipment, activities, timing, locations, and related costs. This plan directs activities for fire and resource personnel to improve protection of human life and property through aggressive fire protection, reduction of hazardous fuels and restoration of fire

adapted ecosystems. This management direction may be updated as a result of approved amendments to the Little Snake RMP or other related planning documents. Each year adjustments will be made to the plan to reflect changes in the annual planning process. The NWCFMP is also meant to be a working reference for fire program information.

This EA has been prepared by the BLM to analyze alternative configurations of fire management polygons within the LSFO. The selected alternative will then be used as a basis for updating the LSFO portion of the NWCFMP.

## **1.4 PURPOSE AND NEED**

The current FMP was approved in 2000 and is based on an environmental analysis from 1999 (CO-100-LS-028). The age of the document, the update of the LSFO's Resource Management Plan in October of 2011, the Northwest Colorado Greater Sage-Grouse Approved Resource Management Plan Amendment in September 2015, and new resource management issues necessitate a "fresh look" at fire management in the LSFO. The management of the fire polygons in the 2000 FMP has become outdated as new goals and objectives for resource management have been identified. Using an interdisciplinary approach, the existing fire management polygons were revised based on current resource conditions. Goals and management objectives were also updated for each polygon based on current land use planning decisions.

The revised fire management polygons would be incorporated into an updated FMP and would result in a document that provides for clear fire management direction that is compliant with national and interagency direction. A programmatic FMP will guide fire management toward the goals of improving firefighter and public safety, reducing fuel loads, and maintaining the ecological functions of landscapes within the planning area.

### **1.4.1 Decision to be Made**

The BLM will decide whether or not to revise the fire management polygons within the LSFO portion of the NWCFMP and therefore update and revise the NWCFMP to ensure conformity with the Little Snake Record of Decision and Approved RMP (October 2011, and as amended in 2015).

## **1.5 PLAN CONFORMANCE REVIEW**

The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Little Snake Record of Decision and Resource Management Plan (RMP)

Date Approved: October 2011

Decision Number/Page: 2.8 Wildland Fire Management/RMP-27, 28

Name of Plan: Northwest Colorado Greater Sage-Grouse Approved Resource Management Plan Amendment

Date Approved: September 2015

Decision Number/Page: Record of Decision 2.2.3, Fire Management Page 2-7

Name of Plan: Browns Park National Wildlife Refuge Comprehensive Conservation Plan

Date Approved: September 1999

Page: 14, 28

Decision Language: According to Federal Wildland Fire Management Policy, fire, is a critical natural process, and will be integrated into land and resource management plans and activities on a landscape scale and across agency boundaries and such integration will be based upon the best available science. Management actions on wildland fire will be consistent with approved fire management plans. Wildland fire may be used to protect, maintain, and enhance resources and will be, to the extent possible, allowed to function in its natural ecological role. Management actions in the Little Snake Resource Management Plan for fire include landscape-level strategies to achieve the resource objectives and goals.

### **1.5.1 Relationship to Statutes, Regulations, or Other Plans**

To meet the goals, objectives, and management actions of IM-WO-2004-007 (Land Use Plan and Implementation Plan Guidance for Wildland Fire Management), other applicable fire management planning goals, policy statements, and specific fire management decisions considered and addressed by the Proposed Action include: Federal Wildland Fire Management Policy and Program Review (USDI and USDA 1995); Review and Update of the 1995 Federal Wildland Fire Management Policy (USDI and USDA 2001a); and, A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-year Comprehensive Strategy (USDI and USDA 2001b). Federal wildland fire management policy mandates that firefighter and public safety are the first priority in any fire management action. For fire suppression activities, protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources would be based on the values to be protected, human health and safety, and the costs of protection. A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-year Comprehensive Strategy (USDI and USDI 2001b) identifies the reduction of hazardous fuels and the restoration of ecosystems as goals to be considered when preparing FMPs. In meeting these requirements, a wide range of fire management activities could be used to achieve ecosystem sustainability.

While adhering to specific planning and fire management requirements, the Proposed Action also complies with other applicable environmental laws, policies, and executive orders (EOs). These authorities include but are not limited to: Healthy Forests Restoration Act of November, 2003 (HFRA); Clean Air Act of July 14, 1955 (CAA) [69 Stat. 66; 42 USC 1856a, 42 USC 1856]; Clean Water Act of 1987, as amended (CWA) [33 USC 1251]; Wild and Scenic Rivers Act (WSRA) [PL 90-542]; Endangered Species Act of 1973 (ESA) [16 USC 1531]; National Historic Preservation Act of 1966, as amended (NHPA) [16 USC 470]; Archaeological Resource Protection Act (ARPA); and, the Colorado River Basin Salinity Control Act.

The Proposed Action complies with Colorado air pollution laws and regulations and is also consistent with Colorado Rangeland Health Standards and Guidelines and Native American Trust Resource policies.

The Proposed Action would be consistent with adjacent federal land agency, State of Colorado, and affiliated Native American tribal planning. Decisions made by the BLM through the implementation-level planning process could also reduce risks to resources on lands adjacent to the BLM lands. For wildland fire use, fire management would be as consistent as possible to the fire management of adjacent lands administered by other federal, state, and Native American tribal authorities. Resources managed by other federal, state, and tribal agencies were also taken into consideration during the development of resource protection measures (RPMs) in conjunction with the Proposed Action.

The Proposed Action has been developed in consideration of statewide local government planning considerations and is consistent with the goals and objectives defined within these plans.

## **1.6 PUBLIC PARTICIPATION**

### **1.6.1 Scoping**

National Environmental Policy Act (NEPA) regulations (40 CFR §1500-1508) require that the BLM use a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis.

External Scoping Summary: The action in this EA is included in the NEPA log posted on the LSFO web site: [http://www.blm.gov/co/st/en/BLM\\_Information/nepa/lsfo/register\\_2013.html](http://www.blm.gov/co/st/en/BLM_Information/nepa/lsfo/register_2013.html). This scoping has involved all federal, state, and local entities within the LSFO's land management area. The scoping included: U.S. Forest Service (Routt and White River National Forests), National Park Service (Dinosaur National Monument), U.S. Fish and Wildlife (Browns Park), Ute Tribes, Colorado Parks and Wildlife, Rio Blanco County, Moffat County, Routt County, Moffat County Sheriff FMO, Steamboat Springs Fire Protection District, Wilderness Ranch Home Owners Association, Greystone area land owners, Routt and Moffat County EMS, and the public. The external scoping has been accomplished through email, phone calls, and meetings to discuss specific issues and concerns in adjoining lands. Browns Park area of concerns is about endangered plants and species in and along the Green River, and heavy involvement through the Grand Junction Ecological Services Field Office was needed. BLM has talked and worked with Browns Park Refuge during this EA process. Ute Tribes were sent certified mail with the proposal of the FMP EA update; no comments were received from the Tribes as of December 28<sup>th</sup>, 2015.

Internal Scoping Summary: This EA was discussed at the LSFO priority meetings January 14 and 28, 2013 with all NEPA ID team members and the Fire Staff. Fire Management Polygons were discussed during these meetings to ensure LSFO RMP directions are being followed and to ensure greater sage grouse management objectives were considered. The FMP EA has been discussed weekly at the NEPA priority meetings 4/1/13 through 2/10/15. There has also been

one on one discussion with ID team members during this period to help in clarifying ID team member specific fire management questions or concerns.

Issues Identified: For the purpose of BLM NEPA analysis, an “issue” is a point of disagreement, debate, or dispute with a proposed action based on some anticipated environmental effect. Issues that were identified included:

- Fire management in sage-grouse habitat,
- Fire management in and around areas of known cultural resources;
- Fire management in Areas of Critical Environmental Concern (ACEC) within the LSFO boundary.

## **CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES**

### **2.1 INTRODUCTION**

This chapter describes and compares the Proposed Action and No Action Alternative, and alternatives considered but dismissed. The Proposed Action complies with Federal Wildland Fire Management Policy (USDI and USDA 2001a). It emphasizes protection of life and resources through wildland fire and fuels management, and incorporates current scientific principles regarding the benefits of wildland fire in the ecosystem while implementing cost-effective fire management techniques.

### **2.2 ALTERNATIVES ANALYZED IN DETAIL**

#### **2.2.1 Proposed Action**

The Proposed Action is to revise the fire management polygons and to update and implement the LSFO portion of the NWCFMP. The immediate purpose of this Fire Management Plan is to provide managers in the Northwest Colorado Fire Management Unit with a functional document to help them integrate fire management with all other resource management programs in the LSFO. Management direction is organized within the FMP by twenty land area subdivisions called fire management units (FMUs).

Wildfire management objectives and actions are presented in the Proposed Action Alternative. Wildland fire suppression is considered unplanned and does not undergo site-specific NEPA analysis due to unknown location, size, and timing of the event. Prescribed fire and non-fire fuel treatments are considered planned actions and must undergo site-specific NEPA review and analysis prior to implementation.

According to data in the Wildland Fire Information System (WFMI 1202), for the 20 year period from 1993 to 2012, LSFO averaged 91 fires a year with an average annual burned acreage of 7,404 acres. This average includes both public and private lands that the LSFO either responded to or assisted with.

#### Wildland Fire Suppression Management

All wildland fire suppression activities connected with fire management operations, and managing wildland fire for resource benefit objectives, (line construction to bare mineral soil to

prevent fire spread with use of hand tools, chain saws, heavy equipment, air resources, burn out operations, and monitoring) beginning with discovery of a fire and continuing until the fire is completely out. Fire suppression goals stated in the Proposed Action Alternative are designed to protect resource values at risk while allowing wildland fire to function in its ecological role, when appropriate for the site and situation. Risk factors are based on time of year and fire intensity levels, acreage of public land and/or private land, and historic fire regimes. Priorities for a quick suppression response include: providing for public and firefighter safety, jurisdictional land authority, preventing wildland fires from spreading to private land, protecting cultural resources, riparian areas or other sensitive resources, and improvements on BLM lands. For any type of response, minimizing cost must be considered.

The purpose of the Proposed Action is to provide fire managers with a framework for planning and managing wildfires to meet landscape-level objectives. Thus, the Proposed Action includes information on specific desired landscape objectives across the entire planning area and a set of operational guidelines for determining the best management practices and fires managed for multiple objectives and for planning fuels treatment projects.

### **2.2.2 Resource-specific Design Features**

If selected, the following design features will be incorporated into the Proposed Action Alternative

Recreation/Wilderness/Lands with Wilderness Characteristics

#### Wilderness Study Areas

1. A Resource Advisor would be assigned to all extended attack fires, including those occurring in or near WSAs.
2. Use of rubber tired motorized equipment would only be used in the WSA if the fire is threatening human life, property, or wilderness characteristics. The District Manager must approve the use of heavy equipment in all cases.
3. Motorized ground vehicles used in fire suppression efforts would remain on existing or designated routes unless fire is threatening life, property, or wilderness characteristics.
4. Sling loading materials into or out of WSAs using a helicopter would be kept to a minimum.
5. Temporary helibases, staging areas, and fire camps will be located outside the WSA unless authorized by the Agency Administrator.
6. Landing of helicopters would be kept to a minimum and would only occur in existing openings not requiring additional manual clearing and is available within a 15-minute walking distance to work site.
7. Use of retardant must be approved by the Agency Administrator. If retardant is not approved, water may be dropped from aircraft as authorized by the Incident commander without additional authorization.
8. All fire suppression activities will use Minimum Impact Suppression Techniques (MIST).



9. Hand crews may use conventional hand tools and with approval from the Agency Administrator, may conservatively use chainsaws for fire line construction.
10. In WSAs, hand lines will be located to make full advantage of natural barriers such as rock outcroppings, trails, and dry washes. Hand lines will be no wider than necessary to stop the spread of fire. Hand line construction will be rehabilitated back to the natural contour. Tree stumps will be cut flush to the ground level.
11. Restoration will be concurrent with or as soon as practicable upon completion of controlled fire measures.
12. A *Leave No Trace* policy would be used in the WSA. All evidence of human activity must be removed to the maximum extent possible.
13. Noxious weeds will be controlled through the following guidelines:
  - Engines, crew carriers, overhead vehicles, and helitack/helicopter support vehicles will, upon check-in and prior to proceeding to the incident, be washed down if they were not cleaned at release from the previous assignment, or are coming from a known area infested with noxious weeds.
    - The wash down will concentrate on the undercarriage, with special emphasis on axles, frame, cross members, motor mounts, and on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse disposed of in a waste receptacle.
  - All portable equipment used on an incident (including but not limited to pumps, hose, fittings, water storage items; tents, tarps, helicopter support equipment, fold-a-tanks and free-standing tanks) will be cleaned of plant debris prior to being used on the incident.
  - During initial briefings, wash downs will be mentioned and facilities made available for oncoming crews.
  - Upon leaving an incident, all vehicles will follow the wash down procedures above. Vehicles will be cleared of wash down procedures during checkout and crew evaluations.

#### Lands Managed for Wilderness Characteristics

1. A Resource Advisor would be assigned to all extended attack fires, including those occurring in lands managed for wilderness characteristics.
2. Motorized ground vehicles used in fire suppression efforts would remain on existing or designated routes unless fire is threatening life, property, or wilderness characteristics. Construction of permanent fire breaks would be avoided.
3. Landing of helicopters would be kept to a minimum and would only occur in existing openings not requiring additional manual clearing and is available within a 15-minute walking distance to work site.
4. Use of retardant must be approved by the Agency Administrator. If retardant is not approved, water may be dropped from aircraft as authorized by the Incident commander without additional authorization.
5. All fire suppression activities will use Minimum Impact Suppression Techniques (MIST).
6. Hand lines will be located to make full advantage of natural barriers such as rock outcroppings, trails, and dry washes. Hand lines will be no wider than necessary to stop

the spread of fire. Hand line construction will be rehabilitated back to the natural contour. Tree stumps will be cut flush to the ground level.

7. Restoration will be concurrent with or as soon as practicable upon completion of controlled fire measures.
8. A *Leave No Trace* policy would be used in lands managed for wilderness characteristics. All evidence of human activity must be removed to the maximum extent possible.
9. Noxious weeds will be controlled through the following guidelines:
  - Engines, crew carriers, overhead vehicles, and helitack/helicopter support vehicles will, upon check-in and prior to proceeding to the incident, be washed down if they were not cleaned at release from the previous assignment, or are coming from a known area infested with noxious weeds.
    - The wash down will concentrate on the undercarriage, with special emphasis on axles, frame, cross members, motor mounts, and on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse disposed of in a waste receptacle.
  - All portable equipment used on an incident (including but not limited to pumps, hose, fittings, water storage items, tents, tarps, helicopter support equipment, fold-a-tanks and free-standing tanks) will be cleaned of plant debris prior to being used on the incident.
  - During initial briefings, wash downs will be mentioned and facilities made available for oncoming crews.
  - Upon leaving an incident, all vehicles will follow the wash down procedures above. Vehicles will be cleared of wash down procedures during checkout and crew evaluations.

#### Realty/ FMP Lands Protection Measures

1. Fire management practices would be designed to avoid or otherwise ensure the protection of authorized rights-of-way and other facilities located on the public lands, including coordination with holders and operators of oil and gas development, major rights-of-way, and communication sites.
2. The actions of any fire management practice shall not destroy, deface, change, or remove to another place any monument or witness tree of the Public Land Survey System (PLSS). Prior to commencing any ground or vegetation disturbing activities, evidence of the PLSS will be marked for protection. Cadastral Survey staff shall be consulted to assist with providing data, searching for and evaluating evidence, and locating and protecting monuments of the PLSS from destruction.

#### Oil and Gas Protection Measures

1. Fire management practices would be designed to avoid or otherwise ensure the protection of authorized oil and gas facilities located on the public lands, including coordination with operators whose facilities or equipment occur within the planning area.

## Surface Water Quality and Riparian Areas

1. Suppress wildfires consistently with compliance strategies for restoring or maintaining the restoration of water quality impaired [303(d) listed] waterbodies. Do not use retardant within 300 feet of waterbodies, unless approved by the agency administrator (AA) for protection of life and property.
2. Plan and implement projects consistent with the maintenance of surface water quality and designated beneficial uses. Planned activities should take into account the potential impacts on water quality, including increased water yields and sedimentation that can threaten fisheries and aquatic habitat; improvements at channel crossings; channel stability; and downstream values. Of special concern are small headwaters of moderate to steep watersheds ( $\geq 25\%$ ); erosive or fragile soils; multiple channel crossings; and native/T&E fisheries.
3. Avoid heavy equipment in riparian areas. During fire operations, consult a resource advisor before using heavy equipment in riparian areas.
4. Limit ignition within native perennial and ephemeral riparian areas. Allow low-intensity fire to burn into treeless riparian areas. Exclude fire in all native riparian tree communities (i.e. cottonwood, willow, box elder).
5. All Fueling will be completed a minimum of 300 feet from water bodies, unless approved by the AA for the protection of life and property.

## Soils

1. Potential fragile/sensitive soil visual indicators:
  - Slopes  $\geq 25\%$
  - West and south facing slopes (typically have less vegetation to hold soils in place)
  - Presence of biological soil crusts
  - Soils that have a sand or clay-dominated texture
  - Shallow soils
  - In sagebrush-steppe vegetation types, areas of moderate burn intensity (higher potential for soil “hydrophobicity”, a temporary condition that can result in increased water erosion)
2. Avoid heavy equipment use on sensitive/fragile soils, wet or boggy soils, and slopes  $\geq 25\%$ , unless otherwise authorized by the AA for protection of life and property. In these situations, implementation of additional erosion control and other soil protection mitigation measures will likely be necessary.
3. “*Don’t Bust the Crust*”: Where biological soil crusts (cryptobiotic soils) are present, follow/stay within already established routes (wildlife trails, designated trails, heavy equipment lines) or travel across areas of slickrock to the extent possible to prevent additional damage to this important soil-stabilizing feature.
4. There may be situations where high intensity fire could occur on sensitive/fragile soil types during wildland fire, wildland fire use or prescribed fire. If significant areas of soil show evidence of high-severity fire, then evaluate area for soil erosion potential and downstream values at risk and implement appropriate or necessary soil stabilization actions such as mulching or seeding to avoid excessive wind and water erosion.

5. Complete necessary rehabilitation on firelines or other areas of direct soil disturbance, including but not limited to water barring firelines, covering and mulching firelines with slash, tilling and/or sub soiling compacted areas, scarification of vehicle tracks, OHV closures, seeding and/or mulching for erosion protection.
6. When using mechanical treatments, limit tractor and heavy equipment use to periods of low soil moisture or when the ground is frozen/under snow to reduce the risk of soil compaction. If this is not practical, evaluate sites post treatment and if necessary, implement appropriate remediation as part of the operation. Rubber-tired equipment is preferred over track equipment when available
7. Treatments such as chaining, plowing and roller chopping shall be conducted as much as practical on the contour to reduce soil erosion critical (BLM ROD *Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States* EIS 2007). If contouring is not achievable, consult with a resource advisor to determine if additional erosion control and other soil protection mitigation measures will likely be necessary.

### Weeds/Range

This list incorporates many suggested practices under many types of land management operation types and is designed to allow managers to pick and choose those practices that are most applicable and feasible for each situation.

### LSFO Noxious Weed Prevention Plan

#### *Fire Management Plan*

1. Integrate prescribed fire and other weed management techniques to achieve best results. This may involve post-burn herbicide treatment or other practices that require careful timing.
2. Include weed prevention and follow-up monitoring in all prescribed fire activities. Include in burn plans the possibility for post-burn weed treatment.

#### *Incident Planning*

1. Increase weed awareness and weed prevention by providing training to new and/or seasonal fire staff on invasive weed identification and prevention.
2. For prescribed burns, inventory the project area and evaluate potential weed spread with regard to the fire prescription. Areas with moderate to high weed cover should be managed for at least 2 years prior to the prescribed burn to reduce the number of weed seeds in the soil. Continue weed management after the burn.
3. Attempt that a weed specialist is included on a Fire Incident Management Team when wildfire or prescribed operations occur in or near a weed-infested area. Include a discussion of weed prevention operational practices in all fire briefings.
4. Use operational practices to reduce weed spread (e.g., avoid weed infestations when locating fire lines).
5. Identify and periodically inspect potential helispots, staging areas, incident command posts, base camps, etc. and maintain a weed-free condition. Encourage network airports and helibases to do the same.

6. Develop a burned-area Integrated Pest Management plan, including a monitoring component to detect and eradicate new weeds early.

#### *Fire-fighting*

1. Ensure that all equipment (including borrowed or rental equipment) is free of weed seed and propagules before entering incident location.
2. When possible, use fire suppression tactics that reduce disturbances to soil and vegetation, especially when creating fire lines.
3. Use wet or scratch-lines where possible instead of fire breaks made with heavy equipment.
4. Given the choice of strategies, avoid ignition and burning in areas at high risk for weed establishment or spread.
5. Hose off vehicles on site if they have traveled through infested areas.
6. Inspect clothing for weed seeds if foot travel occurred in infested areas.
7. When possible, establish incident bases, fire operations staging areas, and aircraft landing zones in areas that have been inspected and are verified to be free of invasive weeds.
8. Cover weed infested cargo areas and net-loading areas with tarps if weeds exist and can't be removed or avoided.
9. Flag off high-risk weed infestations in areas of concentrated activity and show weeds on facility maps.
10. If fire operations involve travel or work in weed infested areas, a power wash station should be staged at or near the incident base and helibase. Wash all vehicles and equipment upon arrival from and departure to each incident. This includes fuel trucks and aircraft service vehicles.
11. Identify the need for possible fire rehab to prevent or mitigate weed invasion during fire incident and apply for funding during the incident.

#### *Post-fire Rehabilitation*

1. Have a weed specialist review burned area rehabilitation reports to ensure proper and effective weed prevention and management is addressed.
2. Thoroughly clean the undercarriage and tires of vehicles and heavy equipment before entering a burned area.
3. Treat weeds in burned areas. Weeds can recover as quickly as 2 weeks following a fire.
4. Schedule inventories 1 month and 1 year post-fire to identify and treat infestations. Eradicate or contain newly emerging infestations.
5. Restrict travel to established roads to avoid compacting soil that could hinder the recovery of desired plants.
6. Determine soon after a fire whether revegetation is necessary to speed recovery of a native plant community, or whether desirable plants in the burned area will recover naturally. Consider the severity of the burn and the proportion of weeds to desirable plants on the land before it burned. In general, more severe burns and higher pre-burn weed populations increase the necessity of revegetation. Use a certified weed-free native seed mix.
7. Inspect and document weed infestations on fire access roads, equipment cleaning sites, and staging areas. Control infestations to prevent spread within burned areas.

8. Seed and straw mulch to be used for burn rehabilitation (for wattles, straw bales, dams, etc.) should be certified weed-free.
9. Replace soil and vegetation right side up when rehabbing fire line.

#### *Pre-project Planning*

1. Environmental analyses for projects and maintenance programs should assess weed risks, analyze high-risk sites for potential weed establishment and spread, and identify prevention practices.
2. Determine site-specific restoration and monitoring needs and objectives at the onset of project planning.
3. Learn to recognize noxious and invasive weeds.
4. Inventory all proposed projects for weeds prior to ground-disturbing activities. If weeds are found, they would be treated (if the timing was appropriate) or removed (if seeds were present) to limit weed seed production and dispersal.
5. Restrict movement of equipment and machinery *from* weed-contaminated areas *to* non-contaminated areas.
6. Locate and use weed-free project staging areas. Avoid or minimize travel through weed infested areas, or restrict travel to periods when spread of disseminates is least likely.
7. Identify sites where equipment can be cleaned. Remove mud, dirt, and plant parts from project equipment before moving it into a project area. Seeds and plant parts should be collected and incinerated when possible.
8. If certified weed-free gravel pits become available in the county, the use of certified weed-free gravel would be required wherever gravel is applied to public lands (e.g., roads).
9. Maintain stockpiled, non-infested material in a weed-free condition. Topsoil stockpiles should be promptly re-vegetated to maintain soil microbial health and reduce the potential for weeds.
10. Use native seed mixes when practical. A certified seed laboratory should test each lot according to Association of Official Seed Analysts standards (which include an all-state noxious weed list) and provide documentation of the seed inspection test. The seed should contain no noxious, prohibited, or restricted weed seeds and should contain no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended.

#### *Project Implementation*

1. Minimize soil disturbance. To the extent practicable, native vegetation should be retained in and around project activity areas, and soil disturbance kept to a minimum.
2. If a disturbed area must be left bare for a considerable length of time, cover the area with weed barrier until re-vegetation is possible.

#### *Post-project*

1. Clean all equipment before leaving the project site when operating in weed infested areas.
2. Inspect, remove, and properly dispose of weed seed and plant parts found on clothing and equipment. Proper disposal means bagging and incinerating seeds and plant parts or washing equipment in an approved containment area.

3. Re-vegetate disturbed soil where appropriate to optimize plant establishment for that specific site. Define re-vegetation objectives for each site. Re-vegetation may include topsoil replacement, planting, seeding, fertilization, and certified weed-free mulching as necessary. Use native material where appropriate and feasible.
4. Monitor sites where seed, hay, straw, or mulch has been applied. Eradicate weeds before they form seed. In contracted projects, contract specifications could require that the contractor control weeds for a specified length of time.
5. Inspect and document all ground-disturbing activities in noxious weed infested areas for at least three growing seasons following completion of the project. For ongoing projects, continue to monitor until reasonably certain that no weeds are present. Plan for follow-up treatments based on inspection results.

### Cultural/Heritage Resources

#### *Wildfires*

1. Wildfires permitted to grow for the benefit of natural resources will have a resource advisor assigned to consider the effects of the fire on cultural resources. Cultural resource concerns for individual polygons are discussed below. The resource advisor will seek the recommendations of the area archaeologist if a wildfire is located in a polygon with specific cultural resource concerns that warrant such input. The area archaeologist may recommend that measures be taken to avoid specific known sites, particularly ones with wooden structures.

#### *Post-Fire Rehabilitation*

1. Cultural resource survey needs for a post-fire rehabilitation project will be determined on a case-by-case basis. Such projects involve the reseeding of areas affected by wildfire, often with the use of a tractor-drawn piece of machinery that discs the earth and plants seeds. This disturbs the uppermost several inches of earth. Generally, reseeding projects are not inventoried at the Class III level because of the geographically extensive nature of the affected area. Also, there are often time constraints requiring that re-seeding be completed soon after a burn in order to prevent erosion.

### Threatened and Endangered Species

1. Prescribed fire activities would not create permanent travel routes that facilitate snow compaction. Construction of permanent firebreaks on ridges or saddles would be avoided.
2. Conduct prescribed fire activities to restore ecological processes and maintain or improve lynx habitat.
3. Manage vegetation to mimic or approximate natural succession and disturbance processes while maintaining habitat components necessary for the conservation of lynx.
4. Projects (habitat improvements, fuels reductions, harvests) would be designed to retain and improve recruitment of an understory of small diameter conifers and shrubs preferred by hares.

5. In aspen stands, the BLM would ensure habitat improvement projects or harvests favor regeneration of aspen.
6. Avoid aerial application of chemical fire retardant or foam—except where human safety is involved—and exclude surface disturbing activities (e.g., fire lines) within 300 feet of any body of water that may intercept critical or occupied habitat of the Colorado River fishes.

#### Fire Operations Best Management Practices for Sage-Grouse Conservation

1. Assign a resource advisor with sage-grouse expertise, or who has access to sage-grouse expertise, to all extended attack fires in or near sage-grouse habitat areas.
2. As appropriate, utilize existing fuel breaks, such as roads or discrete changes in fuel type, as control lines in order to minimize fire spread.
3. To the extent possible, locate wildfire suppression facilities (i.e., base camps, spike camps, drop points, staging areas, heli-bases, etc.) in areas where physical disturbance to sage-grouse habitat can be minimized. These include disturbed areas, grasslands, near roads/trails or in other areas where there is existing disturbance or minimal sagebrush cover.
4. Power-wash all firefighting vehicles, to the extent possible, including engines, water tenders, personnel vehicles, and all-terrain vehicles (ATV) prior to deploying in or near sage-grouse habitat areas to minimize noxious weed spread.
5. Minimize unnecessary cross-country vehicle travel during fire operations in sage-grouse habitat.
6. Minimize burnout operations in key sage-grouse habitat areas by constructing direct fireline whenever safe and practical to do so.
7. Utilize retardant, mechanized equipment, and other available resources to minimize burned acreage during initial attack.
8. As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.
9. Adequately document fire operation activities in sage-grouse habitat for potential follow-up coordination activities.

#### Fuels Management Best Management Practices for Sage-Grouse Conservation

1. Where applicable, design fuels treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns which most benefit sage grouse habitat.
2. Use burning prescriptions which minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of annual grass invasion).
3. Ensure proposed sagebrush treatments are planned with full interdisciplinary input pursuant to NEPA and coordination with state fish and wildlife agencies, and that treatment acreage is conservative in the context of surrounding sage-grouse seasonal habitats and landscape.
3. Where appropriate, ensure that treatments are configured in a manner that promotes use by sage grouse.



4. Where applicable, incorporate roads and natural fuel breaks into fuel break design.
5. Power-wash all vehicles and equipment involved in fuels management activities, prior to entering the area, to minimize the introduction of undesirable and/or invasive plant species.
6. Design vegetation treatments in areas of high fire frequency which facilitate firefighter safety, reduce the potential acres burned, and reduce the fire risk to sage-grouse habitat. Additionally, develop maps for sage-grouse habitat which spatially display current fuels treatment opportunities for suppression resources.
7. Emphasize the use of native plant species, recognizing that non-native species may be necessary depending on the availability of native seed and prevailing site conditions.
8. Remove standing and encroaching trees within at least 100 meters of occupied sage-grouse leks and other habitats (e.g., nesting, wintering and brood rearing) to reduce the availability of perch sites for avian predators, as resources permit.
9. Protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreational areas.

#### Special Status Plant Species

1. Assign a resource advisor to all extended attack fires where fire suppression activities could impact special status plant populations. Coordinate with a resource advisor who has knowledge or access to expertise of special status, threatened and endangered plants or habitat in polygons where special status plants are present. If possible, make every effort to minimize surface disturbance to avoid direct impacts to special status plant populations.
2. Minimize bank disturbing activities along the Green River within the Browns Park National Wildlife Refuge, and coordinate with the Browns Park Refuge Manager or a resource advisor familiar with the threatened plant habitat. Avoid disturbance and suppression impacts within a 50 meter buffer of known habitat.

#### Best Management Practices for Aquatic Invasive Species Guidance for Fire Management

##### General

In order to prevent the spread of aquatic invasive species, it is important that fire management personnel not only recognize the threat aquatic invasive species pose to ecological integrity, but how our fire management operations and resulting actions can influence their spread. Though it is recognized that there is no single method of controlling the spread of aquatic invasive species, nor is there a single all inclusive method of decontamination, there are effective measures that can be taken to limit to spread of aquatic invasive species through prevention and sanitization measures.

##### Mitigation Measures and Prevention

1. Consult local jurisdictional guidelines and contact the presiding regulatory agency regarding guidance for minimizing the spread of those species specific to the area and

providing baseline direction for equipment cleaning procedures specific to prevalent species.

2. Consult with local biologists, resource advisers (READ) and fire personnel for known
  - a. Aquatic invasive species locations in the area and avoid them when possible.
3. Map the distribution of aquatic invasive organisms in watersheds where fire operations could and/or will take place.
4. Do not draft from known water bodies with infestations of aquatic invasive species.
5. Avoid entering water bodies or contacting mud and aquatic plants.
6. Avoid Transferring water between drainages or between unconnected waters within the same drainage. Do not dump water directly from one stream or lake into another.
7. Avoid sucking organic and bottom material into water intakes when drafting from streams, ponds, or rivers. Use the smallest screens possible. If pumpkins can be filled with municipal water, well water, or from a water tender, draft from pumpkins instead of streams or ponds.
8. Avoid obtaining water from multiple sources during a single operational period unless drafting/dipping equipment is sanitized between sources.
9. If contamination of gear with raw water or mud/plants is unavoidable, sanitize equipment.

### Sanitizing Equipment

Any equipment that comes into contact with raw water should be sanitized, which means destroying any unwanted organisms. Sanitizing may be accomplished using several methods and may not require chemical disinfectants. Surfaces to be sanitized may include tanks, portable pumps, hoses, and helicopter buckets. Cleaning and sanitizing equipment will be necessary after use as well as before use.

1. Establish sanitation areas where there is no potential for runoff into waterways, storm drains, or sensitive habitats. For convenience, sanitation stations for aquatic invasive could be set up next to weed wash stations.
2. Ideally and if feasible, sanitize equipment at these times:
  - **Mobilization:** upon initial arrival to the incident and prior to use, unless documentation is presented to verify that equipment was treated prior to arrival on the incident.
  - **During an Incident:** If moving upstream, or from one live drafting/dipping watershed to another.
  - **Demobilization (especially larger Type 1 or 2 incidents):** After use inspect, clean, and sanitize equipment. Documentation of cleaning can be issued by the helicopter manager to the helicopter pilot stating that buckets were cleaned. For engines and tenders, ground support can provide the demob unit with documentation confirming that decontamination has occurred.

### Sanitizing without chemical disinfectants (specifically, quat or bleach)

Chemical disinfectants, though effective, can be hazardous to use and dispose of. Non-chemical methods are effective in most situations and are recommended for:

- External surfaces of all equipment that comes in contact with raw water

- Aircraft
  - Tank with accessible internal surfaces and minimal baffling
1. Thorough drying alone is an easy and effective sanitizing method, but required drying times vary considerably with the species and may not be practical for a quick turnaround. . Drying may be doable, however, after the incident especially in hot weather.
  2. Remove all visible paint parts and mud from external surfaces of gear and equipment. Power wash all accessible surfaces with clean water (ideally, hot water  $\geq 140$  F for 5 to 10 seconds). Power washing will greatly reduce the likelihood that any target aquatic invasive is present, and chemical treatment of external surfaces is not recommended.
  3. Alternating used (possibly contaminated) helicopter buckets with a spare (clean) helicopter buckets can save time and increase efficiency.

**Internal tanks of water tenders, engines, scoopers and other aircraft, and other equipment:**

1. Internal tanks that are accessible (with little or no baffling) are effectively sanitized with hot ( $\geq 140$  F) water from a hot washer or hotsie. Allow spray to contact surface for 5 to 10 seconds. This method is recommended for scooper aircraft tanks.
2. Internal tanks that are NOT accessible (e.g. baffles) have surfaces difficult to reach with hot water. Use of corrosive chemical disinfectants is not recommended in aircraft. Although rinsing equipment with clean (cool) water is not as effective as using chemical disinfectants or hot ( $\geq 140$ oF) water, plain water can flush unattached organisms (e.g .larvae, pathogens) from the system. Fill compartments with enough clean, preferably hot, water to provide adequate coverage on the base and sides and flush for 2 minutes. To the extent possible, drain all decontamination water from the compartments.
3. Fill tanks, pumps, or hoses with enough clean, preferably hot, water and flush. Tank baffles may make flushing difficult, and while rinsing with water may not eliminate all organisms, it is better than not flushing.

Sanitizing with Chemical Disinfectants

Chemical disinfectants are options only for ground-based internal tanks and equipment which is not possible to flush with  $\geq 140$  F water in remote areas.

Using chemical disinfectants is a reliable method to kill and eliminate most aquatic invasive species. Quaternary ammonium compounds, common cleaning agents used in homes and hospitals, are safe for MOST gear and equipment when used at recommended concentrations and rinsed. Chlorine products are not emphasized for use in these guidelines because of their corrosiveness to fabrics, plastics, rubber, and metal.

Cautions for using chemicals:

1. In 2012, quaternary ammonium compounds did not meet corrosion requirements for aluminum and should not be used in aircraft (e.g. fixed-tank helicopters or air

- tankers). However, they are safe for ground-based tanker equipment.
2. Disposal of large volumes of quat is problematic due to hazardous material status.

To sanitize with quat disinfectant:

1. Set up a portable disinfection tank (pumpkin) using a quat cleaning solution. Two brands are readily available (see below for suppliers): Sanicare Quat128® (identical to HDQ®) or Green Solutions High Dilution 256® (which replaces the discontinued Sparquat 256®). Costs and effectiveness are comparable; all are labeled for use as fungicides/virucides.

Recipes for cleaning solutions using either Quat128®, Sparquat 256®, or Green Solutions High Dilution 256®

<b>Volume of tap water</b>	<b>Volume of Quat128 (4.6%)</b>	<b>Volume of Sparquat256 (3%)</b>	<b>Volume of Green Solutions High Dilution256 (1.8%)</b>
100 ml water	4.6 ml	3.0ml	1.8 ml
1 gallon water	6.4 liquid oz./12.7 tbsp/0.8cup	4.1 liquid oz./8.2 tbsp/0.5 cup	2.5 liquid oz./5 tbsp/.03 cup
100 gallons water	5 gallons	3.2 gallons	1.9 gallons
1000 gallons water	50 gallons	32.2 gallons	19.4 gallons

2. For engines and tenders, empty the tank, then circulate the cleaning solution for 10 minutes. Float portable pumps in the disinfection tank and pump cleaning solution through for 10 minutes, then rinse with water. Pump cleaning solution through hoses, then rinse with water. Discharge cleaning solution back into the disinfection tank for reuse.

### Disposal

1. Do not dump treated water into any stream or lake or on areas where it can migrate into any water body, storm drain, or sensitive habitat. Do not dispose of large quantities of diluted quat chemicals in municipal sewer systems without consulting the facility.
2. Use caution when disposing the used cleaning solution. Follow all federal, state, and local regulations. Used cleaning solutions, containing waste quat ammonium product should only be disposed of in accordance with label (and MSDS) directions. For guidance contact your State Water Board or Regional Office of the EPA.

### Safety

1. Use protective, unlined rubber gloves and splash goggles or face shield when handling the cleaning solution and take extra precautions when handling undiluted chemicals. Have eye wash and clean water available on-site to treat accidental exposure.
2. Consult the product label and Material Safety Data Sheet for additional information.

## 2.3 Description of Polygons and Management

The LSFO portion of the NWCFMP is divided into polygons, related to risk areas of concern that are addressed in the LSFO RMP/ROD. The polygons are broken into four planning categories based on fire risk areas. These are referred as A, B, C, and D polygons and are defined as:

**A Polygon (Total/BLM acres= 904):** “A” Polygons are high risk areas and are prioritized full fire suppression polygons for special interest areas where fire would have an undesirable impact to these interests. Most “A” polygons, for example, are small areas that identify developed sites such as BLM developed camp sites and recreation areas, interpretive sites, transmission lines, communication sites, oil and gas developments (compressor stations, out buildings, and well sites), and cottonwood and riparian areas. There is one A polygon located on the LSFO polygon map, but there are multiple smaller size A polygons located throughout the field office boundary in B, C, and D polygons. All A Polygons are proposed to have aggressive suppression actions taken to protect the resources, oil and gas developments, and areas of concern.

**B Polygon (Total acres- 2,629,041/ BLM acres= 545,406):** “B” polygons have a high risk of negative consequences from wildfire, but some resource benefits may be realized in certain areas or circumstances. Generally, negative consequences outweigh positive effects of wildfire. Specific resource management concerns and issues associated with “B” polygons include greater sage grouse priority habitat, high potential for noxious weed infestation, extensive private property, and wildland-urban interface.

The full range of fire management options is available for use within “B” polygons, but selection of one option over another would generally be driven by suppression priorities and effectiveness. “B” polygons would receive a higher priority for fire suppression response than “C” or “D” polygons. Most of the identified “B” polygons in this alternative are characterized by brush/grass fuel complexes that have the potential to exhibit rapid rates of spread and result in large fires. Fuel reduction treatments (both mechanical and prescribed fire) can be effective in protecting or mitigating the identified resources at risk in these polygons.

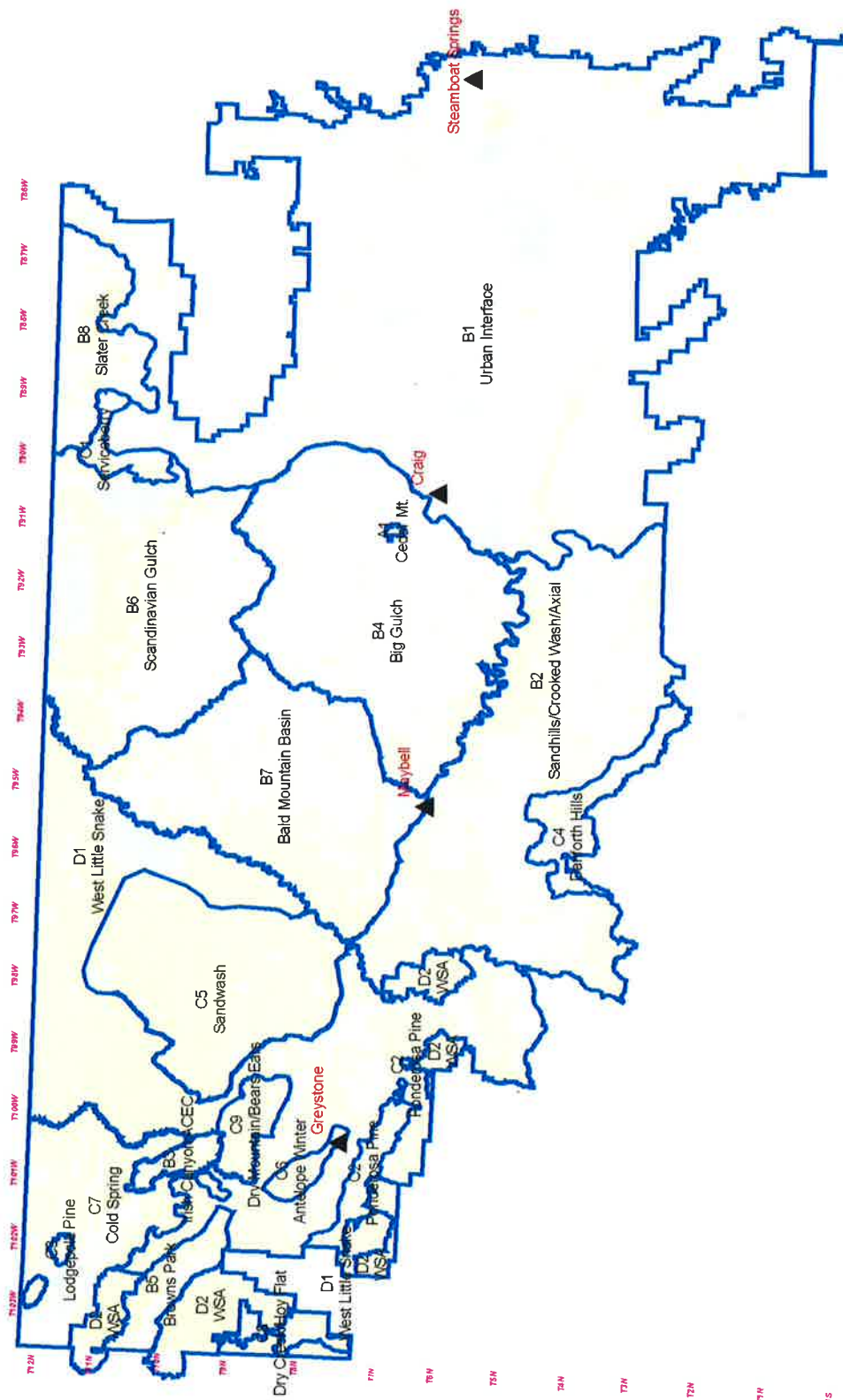
**C Polygon (Total acres= 436,611/ BLM acres= 343,335):** “C” polygons cover a large geographic area, are managed as moderate risk areas, and contain diverse vegetation communities for fire and resource management. These polygons have a higher likelihood of resource benefit type fires with larger acres. “C” Polygons, for example, are in heavier stands of pinyon-juniper woodlands, lodgepole timber stands (Diamond and Middle Mountain), ponderosa timber stands (Douglas Mountain), and includes elk and mule deer winter range.

**D Polygon (Total acres=549,430/ BLM acres= 448,249):** “D” polygons are lower risk areas where there is a higher probability of managing fires on a large scale to enhance resource benefits on BLM managed lands. “D” polygons are located in more remote areas and include stands of continuous pinyon-juniper woodlands on ridges, sagebrush/grass flats and valleys, and steep and rocky slopes.

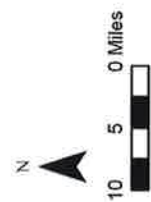
The NWCFMP contains a detailed map which divides the planning area into management units and identifies the desired objectives for the landscape in each unit. The units are labeled by one of the proposed planning objectives categories polygons A, B, C, or D to indicate whether fire is

desired to meet management objectives or fire is not desired, and other types of fuel treatments need to be considered. Areas of concern for fire management in all polygons are the impacts and/or damage to sensitive cultural resources and greater sage grouse habitat objective which are fragmentation and loss of sagebrush habitat where wildfire is not desired. Contained in the planning objectives are the management objectives for each designated unit; the planned actions, which identify potential resource fuel treatments and hazard fuels reduction projects for the unit.

The FMP polygons that are identified by numbers, names, acreage, and fire management objectives are listed and explained on the later pages: Map, Table 1, Pages 24-35.



# LSFO Fire Management Polygons



<b><u>Table 1</u></b>	<b>Total Acres</b>	<b>BLM Acres</b>	<b>Private Acres</b>	<b>State Acres</b>	<b>USFWS Acres</b>
<b>Polygon</b>					
A1 Cedar Mountain	904	904			
B1 Urban Interface	1,048,994	59,093	909,513	80,388	
B2 Sandhills/Crooked Wash/Axial	372,544	153,491	189,825	29,228	
B3 Irish Canyon ACEC	13,050	11,914		1,136	
B4 Big Gulch	307,021	49,686	243,848	13,487	
B5 Browns Park	30,676	18,089	1,239	737	10,611
B6 Scandinavian Gulch	258,301	123,193	98,547	36,561	
B7 Bald Mountain Basin	244,428	111,173	110,826	22,429	
B8 Slater Creek	72,027	18,767	51,680	1,580	
C1 Serviceberry	16,659	7,679	8,396	584	
C2 Ponderosa Pine	21,623	16,307	5,316	0	
C3 Lodgepole Pine	4,683	4,372	0	311	
C4 Danforth Hills	40,170	16,234	21,015	2,921	
C5 Sand Wash	182,610	174,716	2,448	5,446	
C6 Antelope Winter	12,978	10,172	2,806	0	
C7 Cold Spring	120,374	84,313	11,548	24,513	
C8 Dry Creek/Hoy Flat	14,027	7,580	6,447	0	
C9 Dry Mountain/Bears Ears	23,487	21,962	1,490	35	
D1 West Little Snake	468,287	368,587	71,650	28,050	
D2 WSA	81,143	79,662	22	0	1,459
<b>Totals</b>	<b>3,615,986</b>	<b>1,337,894</b>	<b>1,736,616</b>	<b>247,406</b>	<b>12,070</b>

### **A1- Cedar Mountain**

#### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of sagebrush, pinyon/juniper, and mountain shrub. The desire is to maintain this vegetation as long as it does not pose a fire threat to the facilities and structures within the area.
2. Resource Management Objective- The objective in this area is to provide some form of protection ranging from suppression to notification of land owner and protection of communication sites, target range, picnic area, and trail within the area. Additional objectives include:
  - Provide protection for the cultural rock features within the area.
  - Provide protection for all communication sites, power lines, and buildings.
3. Resource Constraints- No wildland fire within perimeter.
4. Suppression Constraints- No heavy equipment within perimeter. In 1956 the BLM granted the Colorado Army National Guard a 40 acre tract for the use as a small arms rifle range in Township 7N, Range 91W, and Section 16. The fire management polygon



has an associated Unexploded Ordnance (UXO) base layer map in WFDSS and Wildcad for fire management safety, objectives, and strategies. Fire and field personnel need to follow UXO safety through UXO awareness briefings and following safety guidelines in the National Wildfire Coordinating Group Incident Response Pocket Guide (IRPG).

## **B1- Urban Interface**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area contains large tracts of private agricultural lands intermingled with BLM lands. It supports isolated stands of sagebrush, mountain shrub, aspen, and rangeland.
2. Resource Management Objective- The primary objective is to protect big game severe winter range and sage grouse habitat. Wildland fires will be suppressed because of the large private land holdings. This is a priority area for hazard fuels treatments to reduce the risk of urban-interface fires. BLM lands adjoining National Forest or State Lands will be managed consistent with fire management goals on those adjoining lands.  
Additional objectives include:
  - Protect the scenic corridor and facilities and signs along the Yampa Valley Trail.
  - Provide some form of protection for the YVEA/WAPA power line.
  - Provide some form of protection for oil and gas sites and associated facilities.
  - Provide protection for all communication sites, power lines, and buildings.
3. Resource Constraints- Wildfire is not desired in greater sage-grouse priority habitat. Limit wildfires in sage-grouse priority habitat to 500 acres or less in size when possible. Fire and vegetation treatments can be utilized to improve big game winter habitat and may be used in greater sage-grouse habitat providing objectives for sage-grouse management are met (resource guidelines; suppression is standard operating procedure for B polygon).
4. Suppression Constraints- No heavy equipment in the facility area. Rock art sites are recorded in the polygon, therefore, use of fire retardant along cliffs should be avoided or the area archaeologist should be consulted prior to application. Avoid heavy equipment use or surface disturbance on the Yampa Valley Trail. Avoid constructing permanent fire brakes on ridges or saddles. Suppression resources must be aware of hazards common to most oil and gas facilities, such as above ground pipelines and aerial power lines.

## **B2- Sandhills/Crooked Wash/Axial**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of sagebrush, bitterbrush, grass, and pinyon/juniper along Duffy Mountain. Some mountain shrub is located in the southern portion of the area. This area has had a history of many large fires which have impacted large tracts of bitterbrush. The desire is to keep large fires out of this area so bitterbrush can reestablish, but to create a mosaic of vegetative age classes. This area also contains Colorado BLM special status species.
2. Resource Management Objectives- The primary objective is to protect the sage grouse, big game winter range by maintaining and improving browse conditions as well as creating a vegetative mosaic. Additional objective include:

- Protect the scenic corridor and facilities and signs along the Yampa Valley trail.
  - Provide some form of protection for the YVEA/WAPA power line and communication sites in polygon.
  - Provide some form of protection for oil and gas sites and associated facilities.
  - Provide protection all for communication sites, power lines, and buildings.
  - Provide protection for all cultural sites, including Juniper Hot Springs wickiup, Axial Basin rock art/rock shelter, Round Bottom homestead, and Monument Butte rock art.
3. Resource Constraints- Burn <10% in prescribed or Management Objectives fires over a 10-year period outside of greater sage-grouse habitat. Manage all wildfires to <500 acres to protect sage grouse habitat/ production areas and big game winter range (resource guidelines; suppression is standard operating procedure for B polygon).
  4. Suppression Constraints- Avoid heavy equipment use of surface disturbance though the Yampa Valley Trail. Rock art sites are recorded in the polygon, therefore, use of fire retardant along cliffs should be avoided or the area archaeologist should be consulted prior to application. Limit equipment use in travel restricted areas to existing roads and trails. Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines.

### **B3- Irish Canyon ACEC**

#### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of mountain mahogany, pinyon/juniper, sagebrush, snowberry, and grass communities. It also contains remnant plant associations, and Colorado BLM sensitive plant species. There are some old growth juniper stands that are healthy at this time. This is an area of high scenic and geologic value. The Irish Canyon Campsite and interpretive site (A polygon) is located within this polygon. The desire is to maintain the area's scenic values and to maintain the healthy native vegetative communities though time.
2. Resource Management Objective- The objective is to protect the area from wildfire. The area contains remnant plant associations, and Colorado BLM sensitive plant species, scenic quality and geologic value concerns. Fire is considered a natural process within the plant communities. However, because of its high scenic value, the area will be protected from wildland fires. Additional objectives include:
  - Provide protection for the rock art interpretive site and trail, and other identified cultural features.
  - Provide some form of protection for oil and gas sites and associated facilities.
  - Provide protection for the campground and associated facilities.
3. Resource Constraints- Burn <25% in one year. Wildfire is not desired in sage-grouse priority habitat within this polygon (resource guideline: Suppression is standard operating procedure for B polygon).
4. Suppression Constraints- Limit heavy equipment use to existing roads/trails where possible. Rock art sites are recorded in the polygon, therefore, use of fire retardant along cliffs should be avoided or the area archaeologist should be consulted prior to application. Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines.

## **B4- Big Gulch**

### **Fire Management Objectives:**

1. **Vegetation Description and Desired Condition-** This area contains large tracts of private grazing lands intermingled with BLM lands. It supports significant stands of sagebrush, mountain shrub, and rangeland. The primary objective is to protect key sage grouse habitat and big game severe winter range.
2. **Resource Management Objective-** Fire is desired for habitat improvement. However, wildland fires will be suppressed because of the large private land holdings and critical sage grouse habitat. This is a priority area for hazard fuels treatments to reduce the risk of urban-interface fires. Additional objectives include:
  - Provide the maximum level of protection for sage grouse habitat.
  - Provide appropriate level of protection for big game severe winter range.
  - Provide the appropriate level of protection for private property, oil and gas sites, and facilities within the polygon.
  - Provide protection for all communication sites, power lines, and buildings.
  - (Protection can range from suppression to notification of private owners).
3. **Resource Constraints-** Limit wildfires in sage-grouse habitat to 500 acres or less in size when possible. Fire and vegetation treatments can be utilized to improve big game winter habitat and may be used in greater sage-grouse habitat providing objectives for sage-grouse management are met. Optimally, no more than 10% of big game severe winter range should be burned or regenerated in the next 10 years(resource guidelines; suppression is standard operating procedure for B polygon).
4. **Suppression Constraints-** No heavy equipment in the facility area. Rock art sites are recorded in the polygon, therefore, use of fire retardant along cliffs should be avoided or the area archaeologist should be consulted prior to application. Avoid heavy equipment use or surface disturbance on BLM lands. Avoid constructing permanent firebreaks on ridges or saddles. Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines.

## **B5- Browns Park**

### **Fire Management Objectives:**

1. **Vegetation Description and Desired Condition-** The dominate vegetation in this area is sagebrush with cheatgrass invading into portions of the area. A portion of this area is the Browns Park National Wildlife Refuge (NWR) (10, 611 acres). The desire is to create a mosaic of vegetative age classes in the sagebrush stands. This area also contains habitat for a threatened plant species, Ute ladies' tresses (*Spiranthes diluvialis*), along the banks of the green river in addition to Colorado BLM sensitive plant species. Ute ladies' tresses orchid is protected under the Endangered Species Act (ESA) activities impacting the river banks will require coordination with a resource advisor or the Browns Park National Wildlife Refuge (NWR) Manager.
2. **Resource Management Objective-** The primary objective is to protect the critical sagebrush as well as deer severe winter range. BLM lands within the area will be managed in conjunction with the NWR.

- Provide protection for all communication site, power lines, and buildings.
3. Resource Constraints- Burn <10% over the next 10 years in sagebrush habitats (resource guidelines; suppression is standard operating procedure for B polygon).
  4. Suppression Constraints- Minimal use of heavy equipment in sagebrush stands, and use existing roads and trails to avoid long term resource damage. Work with Browns Park NWR on use of mechanized equipment on Fish and Wildlife Service (FWS) lands. The Lodore School (5MF1127) and Two Bar Ranch (5MF1126) are located within the polygon on FWS land. These sites are listed on the National Register of Historic Places and should be protected from wildfire with full suppression and other actions consistent with preservation of these sites. Rock art sites are recorded in the polygon, therefore, use of fire retardant along cliffs should be avoided or the area archaeologist should be consulted prior to application for the preservation of the sites.

## **B6- Scandinavian Gulch**

### **Fire Management Objective:**

1. Vegetation Description and Desired Condition- The dominate vegetation in this area is sagebrush, bitterbrush, mountain shrub, and areas of juniper on ridges. The desire is to create a mosaic of vegetative age classes.
2. Resource Management Objective- The objective is to protect and maintain sage grouse habitat and big game winter range. Additional objectives include:
  - Provide some form of protection for oil and gas sties and associated facilities.
  - Provide the appropriate protection for private property, and work with the sheriff and landowners to establish agreements for managed fires in the area.
3. Resource Constraints- Limit wildfires in sage-grouse habitat to 500 acres or less in size when possible. Fire and vegetation treatments can be utilized to improve big game winter habitat and may be used in greater sage-grouse habitat providing objectives for sage-grouse management are met. Optimally, no more than 15% big game winter range will be burned or regenerated in the next 10 years (resource guidelines; suppression is standard operating procedure for B polygon).
4. Suppression constraints- This is a travel restricted area, limit the use of heavy equipment to existing roads and trails whenever possible. Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines aerial power lines. Avoid constructing permanent fire breaks on ridges and saddles.

## **B7- Bald Mountain Basin**

### **Fire Management Objective:**

1. Vegetation description and Desired Condition- The dominant vegetation in this area is sagebrush and pinyon/juniper. The desire is to maintain and/or create a mosaic of vegetative age classes in the sagebrush.
2. Resource Management Objectives- The primary objective is to protect and maintain sage-grouse habitat and big game severe winter range. For sage grouse, limit fire to smaller mosaic burns, and limit prescribed burning to outside of the breeding period. This area contains a significant number of old vegetative treatments (chaining's) that need to be retreated. Additional objectives include:

- Provide some form of protection for oil and gas sites and associated facilities.
  - Provide protection for all communication sites, power lines, and buildings.
  - (Protection can range from suppression to notification of private owners).
3. Resource Constraints- Burn <10% in prescribed or managed fires over a 10-year period outside of sage-grouse habitat. Optimally, no more than 10% of big game habitat will be burned or regenerated in the next 10 years. Limit wildfires in sage-grouse habitat to 500 acres or less in size when possible. Fire and vegetation treatments can be utilized to improve big game winter habitat and may be used in greater sage-grouse habitat providing objectives for sage-grouse management are met. (Resource guidelines; suppression is standard operating procedure for B polygon).
  4. Suppression Constraints- Limit heavy equipment use to existing roads and trails, where possible, in the pinyon/juniper woodland because of possibility of cultural sites. Suppression resources must be aware of the hazards common to most oil and gas facilities such as ground pipelines and aerial power lines.

## **B8- Slater Creek**

### **Fire Management Objective:**

1. Vegetation Description and Desired Condition- This area supports a mix of sagebrush and mountain shrub. The desire is to maintain and/or create a mosaic of age classes of the shrub species.
2. Resource Management Objective- The objective in this area is to protect and maintain sage-grouse habitat, and to improve habitat for deer and pronghorn using fuel treatments to improve the shrub area class diversity. Additional objectives include:
  - Work with sheriff and landowners to establish agreements for use of managed fires in area.
  - Provide some form of protection for oil and gas sites and associated facilities.
  - (Protection can range from suppression, to notification of private owners).
3. Resource Constraints- Burn <10% in prescribed or managed fires over a 10-year period. Limit wildfires in sage-grouse habitat to 500 acres or less in size when possible. Fire and vegetation treatments can be utilized to improve big game winter habitat and may be used in greater sage-grouse habitat providing objectives for sage-grouse management are met. Optimally, no more than 10% of big game winter range will be burned or regenerated in the next 10 years. Manage wildland fires at a final fire size of 100 acres or less (resource guidelines; suppression is standard operating procedure for B polygon).
4. Suppression Constraints- Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines. Limit the use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles.

## **C1- Serviceberry**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of sagebrush and mountain shrub. The desire is to create a mosaic of age class of the shrub species.

2. Resource Management Objective- The objective in this area is to improve habitat for deer and pronghorn using fuel treatment to improve the shrub age class diversity, and to enhance sage grouse habitat. For sage grouse, limit fires to smaller mosaic burns, and limit prescribed burning to outside of the breeding period.
3. Resource Constraints- Burn <10% in prescribed or managed fire over a 10-year period. Optimally, no more than 10% of severe winter range for mule deer and pronghorn will be burned or regenerated in the next 10 years. Protect and maintain the limited amount of sage-grouse habitat within this polygon. Manage all wildland fire at a final fire size of 100 acres or less. Protect Holmes Homestead (5MF527: T 12 N, R 90W) historic structures from wildfire.
4. Suppression constraints- Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines. Limit use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles. Unless a current agreement with the private landowner for managed fires is in place, a suppression-oriented response will occur for fires within 1 mile of private land where continuous heavy fuel is a factor, and within ¼ mile with discontinuous sparse fuels. The same constraints will occur with fires in the area of oil and gas facilities.

## **C2- Ponderosa Pine**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of ponderosa pine with mountain shrub interspersed by sagebrush in the draws and pinyon/juniper occupying the drier rocky sites. Pinyon/juniper is encroaching in many ponderosa stands. The desire is to maintain a healthy stand of ponderosa pine. This area also contains Colorado BLM sensitive plant species.
2. Resource Management Objective- The primary objective in this area is to promote the long term health of ponderosa pine. Fire is generally desired in this polygon. This is a high priority area for hazard fuel treatments to reduce the fire risk to isolated cabins and residences on Douglas Mountain.
3. Resource Constraints- Understory and mixed severity fires in the ponderosa pine are desired, however avoid managing larger fires for resource benefit that are resulting in greater than 60% mortality of ponderosa trees 10 inches diameter at breast height (d.b.h.) and greater. Small mosaic burns are desired in sharptail habitat with prescribed burning limited to outside of the breeding period.
4. Suppression Constraints- Limit the use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles. Wildfires that threaten private land will be suppressed until agreements can be negotiated with landowners.

## **C3- Lodgepole Pine**

### **Fire Management Objective:**

1. Vegetation Description and Desired Condition- The dominate vegetation in this area is lodgepole pine and aspen.

2. Resource Management Objective- The primary objective is to promote the long term forest health. Fire is desired in Lodgepole Pine and Aspen for regeneration. Burns in this fuel type are desired, particularly for aspen regeneration. Suppression resource must be aware of bark beetle mitigation measures during all fire operations for fire fighter safety.
3. Resource Constraints- Re-evaluate management strategy if greater than 50% of the area is burned within the next 10-years.
4. Suppression Constraints- Limit the use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles.

#### **C4- Danforth Hills**

##### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of Mountain Shrub, Aspen, Pinyon/Juniper Woodlands, and Mountain Big sagebrush. The desire is to promote a vegetation mosaic representing natural distributions of plant communities of varying successional stages.
2. Resource Management Objectives- Manage naturally ignited fires <500 acres in size throughout this area to promote a vegetative mosaic.
3. Resource Constraints- Optimally, limit prescribed and wildfires to <25% of the area over the next 10 years.
4. Suppression Constraints- No mechanized line construction due to fragile soils on steep slopes. Rehabilitate newly constructed fire suppression lines or trails to prevent continued use by motorized vehicles and to stabilize fragile soils.

#### **C5- Sand Wash**

##### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of sagebrush, grass and salt desert shrub. The desire is to maintain the current vegetative mix, along with the desire to create a mosaic of vegetative age classes in the sagebrush stands. This area also contains special status species.
2. Resource Management Objective- The three main objectives in this area are:
  1. Protect sage grouse leks/winter range by maintaining the current grass forage base.
  2. Maintain the current grass, forage, and browse base for the wild horse herd.
  3. Maintain the current amount of pinyon/juniper cover for wild horses in the HMA.

##### **Additional objectives include:**

- Provide protection for Clay Buttes Wickiup site.
- Provide some form of protection for the YVEA/WAPA power lines.
- Provide some form of protection for oil and gas sites and associated facilities
- (Protection can range from suppression to notification of private owners).

3. Resource Constraints- Wildfire is not desired in sage-grouse priority habitat in this polygon. Manage 85% of all wildland fires at a final fire size of 100 acres or less. Hold fire size to <500 acres between April 1-June 30 in sage grouse production areas. Suppress all fires during horse foaling season March 1- June 15.
4. Suppression Constraints- Minimize surface disturbance to prevent weed invasion. Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines. In 1964 the Colorado Army National Guard acquired The Sand Wash site by permit for use as a 105mm artillery range. This resulted in a total acreage for Sand Wash artillery range of 23,065.77 acreage comprised of the following sections: T 9N R-99-W Sections 35, 36; T 9N R-98-W Sections 31, 32, 33, 34; T 8N R-99-W Sections 1, 2, 12, 13, 14 and N 112 and SE 114 of Section 11 and N 112 of NE 114 - Section 23 E 112, NW 114, and E 112 of SW 114 - Section 24 T 8N R-98-W Sections 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22 and the portions of sections 27, 28, 29, and 30 north of Colorado Highway 3 18. The fire management polygon has an associated Unexploded Ordnance (UXO) base layer map in WFDSS and Wildcad for fire management safety, objectives, and strategies. Fire and field personnel need to follow UXO safety through UXO awareness briefings and following safety guidelines in the National Wildfire Coordinating Group Incident Response Pocket Guide (IRPG).

## **C6- Antelope Winter**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- The dominant vegetation in this area is sagebrush and pinyon/juniper. The desire is to create a mosaic of vegetation age classes in the sagebrush stands.
2. Resource Management Objectives- The objective is to enhance pronghorn severe winter range. Use prescribed fire and mechanical/chemical treatments to create a vegetative mosaic.
3. Resource Constraints- Burn <25% over a 10-year period. Optimally, no more than 25% of pronghorn winter range will be burned or regenerated over the next 10 years. Manage 85% of all wildland fires at a final fire size of 100 acres or less.
4. Suppression Constraints- Within one mile around the community of Greystone, fire will receive direct control with the goal of limiting 90% of the fires to ¼ acre or less.

## **C7- Cold Spring**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- The dominant vegetation in this area is sagebrush and Aspen. The desire is to create a mosaic of vegetative age classes in the sagebrush stands and to promote the regeneration of Aspen stands. This area also contains Colorado BLM sensitive plant species.
2. Resource Management Objective- The objective will be to maintain and protect habitat for sage-grouse. Additional objectives include providing some form of protection for oil and gas sites and associated facilities (Protection can range from suppression to notification of private owners).



3. Resource Constraints- Burn <10% over a 10-year period outside of sage-grouse priority habitat. Manage 85% of all wildland fires at a final size of 100 acres or less.
4. Suppression Constraints- Limited suppression strategy may be optimal in some areas for fire fighter safety concerns due to heavy fuel loading and steep slopes. Limit the use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles. Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines.

### **C8- Dry Creek/Hoy Flat**

#### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- The dominant vegetation in this area is sagebrush. Vernal District BLM provides the management for range lands located within this area. The desire is to create a mosaic of vegetative age classes in the sagebrush stands. This area also contains Colorado BLM sensitive plant species.
2. Resource Management Objective- The objective is to protect sage grouse habitat. Limit fires to smaller mosaic burns.
3. Resource Constraints- Burn <25% over a 10-year period outside of sage-grouse priority habitat. Manage 85% of all wildland fires at a final size of 100 acres or less.
4. Suppression constraints- Limit the use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles.

### **C9- Dry Mountain/Bears Ears**

#### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- The dominant vegetation in this area is pinyon/juniper with sagebrush stands in the draws and flats. The desire is to create a mosaic of vegetative age classes.
2. Resource Management Objective- The objective is to avoid large, stand replacement fires to reduce the probability of large-scale erosion and cheatgrass invasion. Additional objective includes providing the appropriate level of protection for oil and gas sites and associated facilities.
3. Resource Constraints- Burn <15% over a 10-year period.
4. Suppression Constraints- Limit the use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles. Rehabilitate newly constructed fire suppression lines or trails to prevent continued use by motorized vehicles and to stabilize fragile soils. Limited suppression strategy may be optimal in some areas for fire fighter safety concerns due to heavy fuel loading and steep slopes. Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines.

## **D1- West Little Snake**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- The area supports a mix of pinyon/juniper, sagebrush, and mountain shrub. The desire is to create a mosaic of vegetative age classes. This area also contains Colorado BLM sensitive plant species.
2. Resource Management Objectives- The objective is to encourage fire to promote mosaic age classes in all plant communities except in sage-grouse priority habitat. Additional objectives include:
  - Provide some form of protection for the YVEA/WAPA power line.
  - Provide some form of protection for oil and gas sites and associated facilities.
  - Provide protection for all communication site, power lines, and buildings.Resources Constraints- For managed wildland fires evaluate burned areas in the pinyon/juniper woodland and determine if reseeding is needed to prevent cheatgrass or other invasive species from posing a problem. In areas where insufficient herbaceous plant or seed source exists, Wildland Fire Decision Support System (WFDSS) will determine if the fire start will be managed for resource benefit.
3. Suppression Constraints- Suppression resources must be aware of hazards common to most oil and gas facilities such as above ground pipelines and aerial power lines. Limit use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges or saddles. Unless a current agreement with the private landowner for managed fires is in place, a suppression-oriented response will occur for fires within 1 mile of private land where continuous heavy fuel is a factor, and within ¼ mile with discontinuous sparse fuels. The same constraints will occur with fires in the area of oil and gas facilities. Limited suppression strategies may be employed for firefighter safety and least cost.

## **D2-WSAs**

### **Fire Management Objectives:**

1. Vegetation Description and Desired Condition- This area supports a mix of pinyon/juniper woodlands, sagebrush, and mountain shrub. The desire is to create a vegetative mosaic of age classes. This area also contains Colorado BLM sensitive plant species.
3. Resource Management Objectives- Encourage fire to promote mosaic age classes in all plant communities.
4. Resource Constraints- Burn <50% over a one year period.
5. Suppression Constraints- A full range of management responses are available with emphasis on multiple management objectives. Fires deemed unsuitable for resource benefit, when analyzed in WFDSS, will be managed using a range of management responses with the emphasis on a perimeter control strategy. Additional constraints include:
  - Restoration concurrent with or as soon as practicable upon completion of controlled fire measures.

- Limit the use of heavy equipment to roads and trails if possible, and avoid constructing permanent fire breaks on ridges and saddles.
- Minimize surface disturbance to prevent weed invasion.
- Use conditional fire suppression to allow fire to play its natural role in the ecosystem.

The NWCFMP provides managers with a set of operational guidelines to direct the decision-making process of determining if a fire can be managed through the WFDSS decision tool which addresses the environmental, social-political, and economic factors that must be taken into consideration throughout the decision-making process. The Implementation section gives an overview of the response strategy for each category polygon.

Under this plan managers would evaluate each wildland fire on a case-by-case basis to determine whether full suppression or management for resource benefit is the best response strategy. As an example, in the event a wildland fire was reported, managers would plot the fire on a map to identify its planning objective category. For all wildland fires located within a planning objective category polygon where fire would pose a direct threat to life and property, or where wildland fires are not desired, the appropriate response strategy would be full suppression. All wildland fires in these areas would be immediately suppressed under the Appropriate Management Response guidelines currently in effect.

For all wildland fires located within a planning objectives category polygon where fire could be beneficial to resources, but where there are management concerns, the appropriate response strategy would be to manage wildland fires in a manner that mitigates the suppression constraints identified by the WFDSS decision tool. Examples of these constraints include threatened or endangered species, cultural, or habitat considerations. For wildland fires located within a planning objectives category where there are no special management concerns, the appropriate suppression strategy would be to allow fires to burn with little or no direct management.

For fires in less restricted management polygons, fire managers would need to refer to the WFDSS decision tool to obtain the specific information on the management objectives and suppression constraints for that area. Based on this information, they would consult with the Field Office Manager to determine the appropriate response strategy.

Fire managers would also consider factors that influence fire behavior, such as long and short season drying trends, observed burning potential, and weather conditions as well as other factors that affect fire management, such as the availability of firefighting personnel. Some of the overriding federal and state regulations for the whole area, such as those for air and water quality standards or wilderness management, would be considered in this step. At this point, managers might also attempt to advise other interested parties, such as affected land owners or companies, where appropriate.

If the result of the WFDSS decision tool indicates that the fire does not meet the prescription criteria for management objectives and strategies, then the appropriate response strategy would be full suppression. If the results indicated that the fire meets the prescription criteria, fire and land managers would use the guidelines to the overall management objectives provided by

WFDSS and gather information from ground resources to determine firefighting strategies and tactics. The safety of fire fighter personnel and equipment and threats to private property or life would remain a primary consideration in deciding these strategies and tactics.

The significance of the proposed NWCFMP is that it provides the foundation for all wildland fire and fuels management projects in the Little Snake Field Office and the Browns Park NWR; it would function as the approving mechanism for the management of wildland fires. The NWCFMP would also be the guiding document for prescribed fires and other types of fuels treatments from which a site-specific plan and any required NEPA process should tier.

The long-term implications of the NWCFMP is that it provides the most comprehensive management alternatives for restoring the historic role of fire in the evolution of healthy landscapes, with the ultimate goal of improving management practices. This plan lays the foundation for managers to strategically use prescribed fire and managed wildland fires or other fuels management treatments to reduce fuel hazards and improve resource conditions throughout the planning area. Over time, these fuels management treatments would more nearly restore the landscape to a healthy condition, which would reduce the need for prescribed fires. Eventually, managers may be able to allow more wildland fires to burn naturally under managed conditions.

The NWCFMP is designed to be dynamic to incorporate new scientific and monitoring data, changing landscape conditions, or emerging management concerns. While the general philosophy of the NWCFMP would not change, details relating to specific locations on the ground, fire management constraints, or landscape objectives may change. For example, as a result of fuels reduction projects, such as managed wildfires, prescribed burns, and mechanical treatments, the landscapes in these areas would change, therefore the objectives for all or part of these areas may be reevaluated. A reevaluation could also show a negative landscape change.

The driving concept behind the NWCFMP is to eventually improve landscape conditions throughout the planning area to the point where managers can rely less on prescribed treatments and more on managed wildland fires to maintain healthy landscapes.

### **2.3 No Action Alternative**

The No Action Alternative would be the continued use of the current NWCFMP and 2000 EA (EA #: CO-100-00-028EA) associated with the plan. Fire Management direction includes suppression goals and acres, identification of natural and cultural values at risk, and general fuels treatment direction including prescribed fire and resource benefit fire.

The No Action Alternative represents current fire management direction as outlined in the 2000 Little Snake FMP (BLM 2000). Although the 2000 plan prioritizes protection of life and resources, it contains fewer fuels management goals and opportunities for wildland fire to benefit ecosystems. In addition, the 2000 FMP does not comply with current Federal Wildland Fire Management Policy.

Although the No Action Alternative has similar goals such as protection of life, protection of resources, and cost efficiency, it does not incorporate management decisions made in the Little

Snake ROD/RMP. Under the No Action Alternative, the role of wildland fire management in the ecosystem is not in conformance of the current RMP and does not include latest information on all resource protection measures. One of the current resources protection measures includes Greater sage- grouse general and priority habitat management zones within the LSFO boundaries. These sage-grouse management zones would not be adequately addressed in fire management with the No Action Alternative.

National fire direction states that all FMPs need to be in the new national FMP template; therefore, under the No Action Alternative, the 2015 NWCMP would be updated using the new template, but the management boundaries (polygons), would remain the same.

## 2.4 Alternatives Considered But Eliminated from Detailed Analysis:

The alternative of allowing all fires to burn, with no management response, would inevitably result in irreversible and irretrievable loss of life, property, or resources. Therefore, this alternative was eliminated from further consideration.

# CHAPTER 3 – AFFECTED ENVIRONMENT AND EFFECTS

## 3.1 INTRODUCTION

### Affected Resources:

The CEQ Regulations state that NEPA documents “must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 1 lists the resources considered and the determination as to whether they require additional analysis.

**Table 1.** Resources and Determination of Need for Further Analysis

Determination <sup>1</sup>	Resource	Resource Issue/ Rationale for Determination	Specialist Initials	Date
<b>Physical Resources</b>				
PI	Air Quality	See discussion in Chapter 3, Section 3.2.1	ES	12/23/15
NI	Floodplains	There are FEMA-identified 100-year floodplains along portions of most streams and rivers across the Little Snake Field Office. Neither of the alternatives analyzed include permanent development within identified floodplains. No threat to human safety or property resulting from naturally occurring flooding along waterways would result from implementing either of the alternatives.	ES	12/3/15

<b>Determination<sup>1</sup></b>	<b>Resource</b>	<b>Resource Issue/ Rationale for Determination</b>	<b>Specialist Initials</b>	<b>Date</b>
NI	Hydrology, Ground	The proposed action would not affect groundwater hydrology.	ES	12/3/15
PI	Hydrology, Surface	See discussion in Chapter 3, Section 3.2.2	ES	12/18/15
NI	Minerals, Fluid	Neither action is anticipated to affect fluid minerals. Fluid mineral exploration occurs within most of the proposed management polygons at various levels. While oil and gas operations are present the management areas, actions taken would not be changed, and that suppression actions would be taken when oil and gas facilities are within fire management areas. In addition, an oil and gas development likely changes the overall vegetative structure which can be utilized to assist in suppression of wildland fire as vegetative breaks. Oil and gas developments are located in A polygons, which require aggressive fire suppression actions. Fire suppression on fluid mineral developments would protect the ability to develop the fluid mineral resource, and protect public safety.	JRR	12/8/2015
NI	Minerals, Solid	The Proposed Action would not affect solid minerals. Fire suppression on solid mineral authorizations would protect the solid mineral resource.	JAM	10/29/14
PI	Soils	See discussion in Chapter 3, Section 3.2.3	ES	12/3/15
NI	Water Quality, Ground	The proposed action would not affect groundwater quality.	ES	12/3/15
PI	Water Quality, Surface	See discussion in Chapter 3, Section 3.2.4	ES	12/23/15
<b>Biological Resources</b>				
PI	Invasive, Non-native Species	See discussion in Chapter 3, Section 3.3.1	CBR	11/18/14
PI	Migratory Birds	See discussion in Chapter 3, Section 3.3.2	DA	2/5/15
PI	Special Status Animal Species	See discussion in Chapter 3, Section 3.3.3	DA	2/5/15
PI	Special Status Plant Species	See discussion in Chapter 3, Section 3.3.4	ARH	12/3/15
PI	Upland Vegetation	See discussion in Chapter 3, Section 3.3.5	JHS	2/5/15
PI	Wetlands and Riparian Zones	See discussion in Chapter 3, Section 3.3.6	ES	12/28/15
PI	Wildlife, Aquatic	See discussion in Chapter 3, Section 3.3.7	DA	2/5/15
PI	Wildlife, Terrestrial	See discussion in Chapter 3, Section 3.3.8	DA	2/5/15

<b>Determination<sup>1</sup></b>	<b>Resource</b>	<b>Resource Issue/ Rationale for Determination</b>	<b>Specialist Initials</b>	<b>Date</b>
PI	Wild Horses	See discussion in Chapter 3, Section 3.3.9	KLM	10/21/14
<b>Heritage Resources and the Human Environment</b>				
PI	Cultural Resources	See discussion in Chapter 3, Section 3.4.1	BSN	1/13/15
NI	Environmental Justice	The Proposed Action would not impact populations and would not have disproportionate or adverse human health or environmental effect on minority or low income populations. Environmental effects such as air quality would affect the area's population equally, without regard to ethnicity or income level.	ALM	10/29/14
NI	Hazardous or Solid Wastes	Potential impacts to Hazardous or Solid Waste sites and Unexploded Ordinance (UXO) in two former the Army National Guard training sites would not be significant. No heavy equipment would be used in these areas. Firefighters would be expected to back off and stay up wind from smoke. Any wastes generated by wildland fire suppression activities must be disposed of in accordance with local, state, and federal regulations.	SW	02/11/15
PI	Lands with Wilderness Characteristics	See discussion in Chapter 3, Section 3.4.2	GMR	2/12/15
PI	Native American Concerns	See discussion in Chapter 3, Section 3.4.3	BSN	1/13/15
PI	Paleontological Resources	See discussion in Chapter 3, Section 3.4.4	JAM	10/29/14
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.	ALM	10/29/14
PI	Visual Resources	See discussion in Chapter 3, Section 3.4.5	GMR	2/12/15
PI	Access and Transportation	See discussion in Chapter 3, section 3.5.1	DJA	10/29/14
NI	Fire Management	The two alternatives considered in this EA would not greatly affect large suppression costs. Either alternative would allow fire managers to use resource benefit fires to help in reducing suppression costs. The main emphasis in the new alternative was changing fire management polygon boundaries to correspond with sage grouse management zones. So fire suppression cost increases could happen in sage grouse habitat, but full suppression strategies were always used this vegetation for sage brush management.	RS	3/23/15

<b>Determination<sup>1</sup></b>	<b>Resource</b>	<b>Resource Issue/ Rationale for Determination</b>	<b>Specialist Initials</b>	<b>Date</b>
PI	Forest Management	See discussion in Chapter 3, Section 3.5.3	DB	2/5/15
PI	Livestock Operations	See discussion in Chapter 3, Section 3.5.4	JHS	2/10/15
NI	Prime and Unique Farmlands	There are soil types designated as “prime farmland if irrigated” and “farmland of statewide importance” within the Little Snake Field Office. Generally, farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. None of these soils are or would become irrigated or otherwise manipulated so as to create conditions favorable to create prime farmland on public lands as part of either alternative.	ES	11/3/15
NI	Realty Authorizations, Land Tenure	Potential impacts to Realty Authorizations would not be significant. Concerns related Realty Authorizations during planned activities have been considered with the inclusion of BMPs in the Proposed Action to avoid or otherwise ensure protection of authorized rights-of-ways and other facilities located on public lands.	ALM	10/29/14
PI	Recreation	See discussion in Chapter 3, section 3.5.6	DJA	10/29/14
NI	Areas of Critical Environmental Concern	The Irish Canyon ACEC is designated as the B3 unit. Contained in the planning objectives are the management objectives and the planned actions, which identify potential resource fuel treatments and hazard fuels reduction projects for the unit. Fire management would not change from previous plan.	GMR	2/12/15
PI	Wild and Scenic Rivers	See discussion in Chapter 3, Section 3.6.1	GMR	2/12/15
PI	Wilderness Study Areas	See discussion in Chapter 3, Section 3.6.2	GMR	2/12/15

<sup>1</sup> NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.

## 3.2 PHYSICAL RESOURCES

### 3.2.1 Air Quality and Climate

Affected Environment: Wildland fires (both prescribed fire and wildfire) are a potentially significant source of air pollutant emissions because of the combustion process which burns



various ages, sizes, and types of vegetation. The amount and chemical composition of emissions depends on several factors, including: (1) the size and intensity of the fire; (2) meteorological conditions (e.g. temperature, wind speed, and wind direction); (3) fuel type (e.g. age class, size, vegetation types, and moisture content), and; (4) available fuel loading (the total mass of combustible material).

Dry fuels, such as dead, down, or dry vegetation are consumed in the beginning stages of burning. As a fire progresses, green, live vegetation is dried through heat convection, and then consumed as well. Under extreme conditions, this process may initiate a chain reaction that results in a widespread, uncontrolled wildfire.

The most effective means of controlling air pollutant emissions from wildfire is to inhibit these large, catastrophic fires through vegetation treatments that break up heavy, continuous fuels. There are many fuel treatment methods available to land managers to improve vegetation and reduce hazardous fuel loadings. Depending on conditions, managed natural fires and prescribed fires can be effective methods to reduce heavy fuels and create vegetation mosaics. However, any fire, either a managed natural start or a prescribed fire, must be continually monitored to assure that the burning conditions remain within a previously determined prescription of controlled fire and smoke behavior. When properly executed, these managed fires are expected to result in fewer air quality impacts in both the short term and the long term.

Managed fires are normally much smaller than uncontrolled wildfires, and involve less combustion because they can only be used when the fuel type and fuel loading meet preset management parameters for control. They are used under weather conditions that enhance efficient fuel consumption and air pollutant dispersion. In addition, once a mosaic of small fires have broken up hazardous fuel levels in an area, the risk of a uncontrolled wildfire is reduced, which reduces the risk of significant impacts to air quality.

Environmental Consequences, Proposed Action: Under both the Proposed Action and the No Action alternative, all fire activities would be conducted in accordance with applicable air quality regulations as required by FLPMA and the Clean Air Act. All prescribed fires would be conducted in accordance with the State of Colorado Smoke Management Program, and would be regulated under Colorado Department of Public Health and Environment, Air Pollution Control Division.

Under the proposed alternative, air quality in the planning area would be positively impacted over the long term. Any increase in acres burned per year would temporarily increase negative short-term smoke impacts in remote areas because of the increased use of managed fires. However, mitigation measures have been built into the Fire Management Plan to minimize potential negative impacts. Air quality must be considered in the prescriptive criteria to determine the appropriate management response. If these standards for air quality cannot be met, fires would be suppressed. This alternative would provide the greatest management flexibility to control smoke production and impacts in smoke sensitive and high visibility areas.

Additionally, this alternative would also provide the greatest management flexibility in using fire to achieve resource objectives, and it would achieve the desired landscape objectives in the

shortest time period. Therefore, the cumulative impact of this new management approach would be positive in the long term because it would reduce fuel loads and lower the risks of large, catastrophic fires and commensurate air quality impacts. Managing wildland fires for resource benefit under controlled conditions in selected areas and within applicable prescription criteria would significantly reduce many of the negative air quality impacts from uncontrolled wildfires, as discussed above. Also, by reducing the risk of uncontrolled wildfires, this alternative would increase the personal safety of fire fighters and the public.

Environmental Consequences, No Action Alternative: The No Action alternative could give rise to marginally poorer air quality in the near term. This is because the update to the Fire Management Plan being analyzed here calls for increased wildland fire suppression in locations classified as greater sage-grouse habitat. Not suppressing fire could increase air pollution in these locations. Where high fuel loads are present, there is a risk of larger, more intense wildfires burning for longer periods. These types of fires produce high air pollutant emission levels, and ultimately result in more intense and widespread air quality impacts. Therefore, this alternative would eventually increase air quality and visibility impacts from smoke, with the potential to cause more widespread respiratory problems and increase regional haze.

Environmental Consequences, Cumulative Impacts: The Proposed Action would decrease the potential for the occurrence of severe and uncontrollable wildland fires and would create a trend toward a more natural fire regime on BLM-managed lands. These efforts would enable the agency to manage wildland fire and associated emissions more effectively, thereby decreasing the potential for negative impacts to air quality.

The use of planned fire and mechanical treatments would continue to have a minor impact on air quality. The planned nature of these events would allow BLM to schedule and locate treatments for optimal control of emissions. One impact from these actions is a trend toward lower fire regime condition classes, and fewer severe and uncontrollable wildfires.

Mitigation: Consultation with the State of Colorado is a continuing process, as described below. Management will cooperate with other land managers and the State of Colorado to minimize air quality impacts from smoke on local communities and individuals, including the following specific measures:

1. When preparing site-specific burn plans, the agency will obtain all necessary air pollutant emission permits and approvals from the State of Colorado prior to initiating a prescribed fire. They will also have prior approval for fires in areas where natural fire is desired. The agency will follow and implement the terms of the interagency Colorado Smoke Management Program as well as any site-specific open burning permit.
2. The agency will apply management techniques to minimize smoke production and to enhance dispersion, including burning under optimum weather conditions, expanding the burning season, using backfires where applicable, burning small blocks, etc. Application of these techniques will minimize smoke exposure impacts (seeing, smelling, and breathing).

3. Once a wildland fire for resource benefit or a prescribed fire is initiated, the agency will monitor weather and the burning and smoke dispersion conditions to assure air quality impacts remain within prescribed smoke management levels. If monitoring indicates conditions are no longer within prescription, managers will declare the fire a wildfire, and initiate the appropriate response strategy.
4. The agency will establish and maintain close communications with State and local agencies regarding the status of managed fire projects. They will notify concerned smoke sensitive organizations (e.g. hospitals, schools, retirement centers, etc.) of intentions and conditions, both prior to and during prescribed fire activities.
5. The agency will ensure that the general public is informed of the status of managed fires, including smoke management contingencies, through the local press, radio and television.
6. Field personnel will maintain communications with the Interagency Dispatch Office. This office will act as a clearinghouse, providing and maintaining daily information on burning projects throughout the region.

### **3.2.2 Hydrology, Surface**

Affected Environment: The planning area is within the Upper Colorado River Basin. The majority of the planning area is within the Yampa River sub-basin, although the area west and northwest of Sheephead Basin is within the Green River Sub-basin. The Yampa River headwaters are on the eastern slopes of the Flat Tops Mountains. From there it flows north to Steamboat Springs, at which point it turns to the west and flows toward the confluence with the Green River. The southern portion of the Yampa watershed includes the northern slopes, and northerly flowing drainages of the Danforth Hills as they generally rise in elevation to the east, and blend into the small mountains and foothills that eventually form the Flat Tops mountain range. The Yampa watershed and much of the planning area is oriented in this west to east direction. Elevation of the planning area generally increases from west to east, with the exception of extensions of the Uintah Mountains from Utah. A good portion of the Uintah Mountains located in the planning area drains into the Green River, but prominent features such as East Douglas Mountain, Cross Mountain and Juniper Mountain extend east into the Yampa and Little Snake River watersheds.

The area to the west of the Vermillion Bluffs and north of Lookout Mountain is drained by Vermillion Creek, which is a badland tributary of the Green River. The Green River segment that flows into Colorado is regulated by releases from Flaming Gorge Dam in Utah. It enters Colorado through Browns Park National Wildlife Refuge, and then meanders southeasterly before turning south into Dinosaur National Monument. The confluence of the Yampa and Green Rivers is within Dinosaur National Monument near the Utah border. The area to the east of the Green River is drained predominantly by the Little Snake River. It includes Sand Wash Basin, Powder Wash, the northwestern portion of the Great Divide area, and the northern slopes of the Elkhead Mountains. Godiva Rim, Bald Mountain. The northwesterly delineation from Great Divide to the Elkhead Mountains forms the watershed boundary of the Yampa River to the east

and south, separating it from the Little Snake River watershed. The confluence of the Little Snake and Yampa Rivers is at Lily Park, downstream of Cross Mountain, and slightly upstream from Dinosaur National Monument.

A small portion of the planning area located southeast of Elk Springs drains into the White River through three primary tributaries: Sagebrush Draw, North Fork Sagebrush Creek, and Crooked Wash. The confluences of Sagebrush Draw and North Fork Sagebrush Creek with Crooked Wash are just south of the planning area boundary. The confluence of Crooked Wash with the White River is farther south.

The water yield from public lands varies considerably. Factors influencing water yields include soil type; vegetation composition and density; watershed aspect, elevation, and slope; precipitation amount, duration, intensity, and seasonal distribution, as well as temperature. In the western portion of the planning area, mostly within the Vermillion Creek watershed, runoff from the salt desert shrub areas most often occurs from high intensity rainfall events in June, July and August, although the accumulated snowpack some winters results in substantial spring snowmelt.

In sagebrush and taller vegetation types, runoff results from consistent annual spring snowmelt from accumulated snowpack. Initially, runoff occurs because of shading and aspect, but snow depth and snow accumulation increases in the Yampa Valley and in the basin, generally from the west to east. As the depth of the accumulated snowpack increases, conditions favorable for the melting water to infiltrate and percolate through the soil profile increase. Generally, spring runoff is enhanced when there is an extensive frost layer within the soil profile, or when the soil surface layers are saturated.

The increase in plant-available soil moisture also increases from the west to the east in the planning area, except for the higher elevation landscapes associated with the Uintah Mountains. Therefore, the heavier fuels that do exist within the planning area also generally increase from the west to the east. Most of the heavy fuels associated with mountain brush, such as oak brush, and timber are located in the B1 and C4 polygons. Pinyon-juniper and juniper stands are the heavier fuels which will carry an intense fire. This community type generally occurs on steep slopes associated with the Uintah Mountain influence, Danforth Hills, other geologic uplifts, and break slopes along river valleys.

By consuming both vegetation and ground litter, fire reduces or eliminates the vegetation cover that would normally intercept and buffer precipitation before it hits the soil surface. As a result, burned sites have lower soil-water infiltration rates, which in turn result in increased surface runoff and decreased plant-available moisture in the soil. Impacts in most sagebrush/grass areas will be limited to the period in which the vegetation is depleted. Consequently, this accelerated surface runoff will be short-term. Many of the perennial grasses will not be killed, and so will support shoot growth when conditions improve. The hydrologic impacts to soil usually moderate with time after a fire, as vegetation becomes reestablished on the site.

Increases in runoff from fire can stress the stability of the receiving streams and the associated aquatic biota by increasing the total discharge and peak flows of runoff and possibly altering the

timing of flow. In the short term following fire, the lack of vegetation on a site will cause alterations in the development of the snowpack, and will increase or decrease spring snowmelt rates. The potential impacts to receiving streams will vary depending on site factors such as the type and condition of the soil, the vegetation type, size of the fire disturbance, climatic conditions, and the general topography. The seasonal timing, size, duration, and intensity of the fire will also determine the magnitude of these impacts. Intense fires are associated with pinyon-juniper, mountain shrub, ponderosa pine, and lodgepole pine communities over most of the planning area. However, only the pinyon-juniper community type occurs extensively in the eastern and northern portions of the project area. If there are extensive, high-intensity fires in pinyon-juniper communities just prior to receiving substantial moisture, runoff from the site will be accelerated, and cause flash flooding within downstream channels.

Environmental Consequences, Proposed Action: Under the proposed alternative, areas within A and B polygons, with the exception of Scandinavian Gulch and Bald Mountain Basin, would not be impacted because there would be little change in fire management. In addition, much of the area within the B2, B4, B6, B7, C5, and C9 polygons lack sufficient fuel to sustain fire. Therefore, no large scale hydrologic impacts would be anticipated in those areas either. The pinyon-juniper communities that exist in all the polygons west of the Little Snake River as well as the mountain shrub communities could potentially experience additional burned acreage that would be exposed to these hydrologic impacts, primarily as a result of high intensity summer rain following fire. The highest risk of off-site impacts to ephemeral stream channels from accelerated runoff would occur within the B2, B4, C1, C5, and C9 polygons. However, the Fire Management Plan contains mitigating measures that would limit the size of a managed fire, and would reduce the potential of widespread hydrologic impacts in these polygons. Most of the other stands of pinyon-juniper and heavy fuels in the B2, B4, and D1 polygons are of limited size or have natural barriers that would help to limit the size of an intense fire. The D2 polygons have some heavy continuous fuels within the Wilderness Study Areas. However, the established prescriptive parameters would determine the constraints of fire use.

Under this alternative, the hydrologic function in the planning area would benefit in the long term. As fire use increased, it would create mosaics in the plant communities which would produce more diversity in vegetation and successional stages. The early seral and mid-seral stage plant communities often have more annual plant production closer to the ground, with roots in the surface soil that would buffer the influence of rainfall and runoff.

Environmental Consequences, No Action Alternative: No significant impacts to the hydrology of the planning area would result under this alternative. However, certain areas with sage-grouse habitat would be more likely to burn more extensively if the proposed action is not undertaken.

Environmental Consequences, Cumulative Impacts: If certain areas in sage-grouse habitat are more actively suppressed, then over time fuels could continue to build, with the potential of a larger, more intense fire that might not be controllable, even with intense suppression efforts. Even if these areas are not burned, without fire re-introduced into the landscape, these plant communities would reach ecological climax and eventually become decadent.

**Mitigation:** Most of the hydrology impacts related to wildland fire result from accelerated levels of erosion and runoff, and so burned areas within pinyon-juniper, mountain shrub and sagebrush communities that are lacking desirable perennial grass vegetation will be seeded. Relatively small fires may have sufficient vegetation growing on the perimeter to provide a natural seedbank if grazing systems are compatible with desirable plant seed production. However, it may be necessary to seed with adapted plant species mix in the fall following fire or prior to spring germination period. Also, water extracted from local water developments and streams for the purpose of fire suppression, would be at a rate and duration as to not impair aquatic biota.

### **3.2.3 Soils**

**Affected Environment:** Soils are variable across the planning area and develop different characteristics and different properties depending on multiple factors, including climate (in particular the moisture regime), vegetation, position on the landscape, and parent materials (geologic, alluvial, colluvial, and eolian). Intensive soil surveys have been completed for Moffat, Routt, and Rio Blanco Counties. A complete review of the soil types that occur in the planning area is presented in RMP.

The interaction of precipitation and plant cover influence the depth and productivity of the soil. In turn, soil depth affects water storage capacity, which is important for plant growth. Soils evolve with the plants that grow on them. Generally, where a soil is deep and is capable of storing fall and winter precipitation, it will produce greater amounts of vegetative material. Some shallow soils do support heavy fuels. However, in these situations, roots penetrate underlying substrates for water. Within the Yampa Valley and the majority of the planning area, the heavier fuels occur in the east and are within the B1 polygon. Some of fragile soils described in the RMP occur in the northwest corner of the planning area in badlands on steep slopes dissected by Vermillion Creek, Shell Creek and Dry Creek. Another area of fragile soil slopes occurs in the Sand Wash Basin along Yellow Cat Wash and Dugout Draw. These steep slopes do not have the vegetative cover to sustain a wildfire.

Along the south central planning area boundary, fragile soils also occur in the Danforth Hills, which has numerous northeasterly drainages dissecting these hills into a pattern of ridges, steep slopes and valleys. These soils have slope failures, or mass-wasting events, when they hold excessive accumulated moisture. This can occur naturally with undisturbed soil and plant communities. Soils most prone to mass-wasting are fine textured, and occur on steep slopes. These soils are commonly occupied by mountain shrub communities, which can sustain fire during the drier portions of the growing season. Most of the fragile soils with steep slopes which are capable of sustaining a wildfire occur in the B1 polygon. Parts of the B4 and B2 polygons also include some of these slopes with vegetation communities of sagebrush/grass, mountain brush and juniper.

The C9 polygon has some fragile soil areas with extensive areas of heavy fuels and some old growth pinyon-juniper. The majority of this area is mapped with soils described as the Grieves-Crestman complex, with 10 to 40% slopes. Grieves soils comprises 45% of this complex and occurs on footslopes. This soil is coarse and very deep, with a moderate water holding capacity. Crestman soil comprises 35% of this complex. It occurs on hillcrests and back slopes. Crestman

is a shallow soil which has a very low water holding capacity. Both soils are considered to have moderately rapid permeability, medium runoff rates, and high potential for water and wind erosion. Soils can be impacted from fire to varying degrees and in different ways. In the planning area, erosion of soils caused by precipitation and subsequent runoff is the primary impact that is expected following fire. Wind erosion of soils following fire is also expected, especially in sandy soils on windward aspects and ridges. Most of the eroded particles would be deposited locally in areas having slower winds and obstacles. Under low and moderate-intensity fires, soil erosion in most areas would be short term, and as vegetative regrowth occurs, often in the fall following a fire, the vegetative cover would again protect the soil.

Another anticipated impact is to soil hydrology. The effect of fire to consume vegetation, ground litter and to a lesser extent the soil organic matter can result in lower infiltration rates. In low to moderate-intensity burns there will be plants, primarily perennial grasses that will not be killed. As a result, their root systems will retain some level of soil stability and filtration. However, in sagebrush-dominated communities that lack an appropriate perennial grass understory prior to fire, the soil hydrology may be impacted dramatically. In turn, the impact of raindrops on the soil surface would not be mitigated as well without adequate ground cover. However, the resulting ash layer following a fire would some absorb some of the energy. The displacement and redistribution of fine soil particles by raindrops can cause physical crusts, which affect the conditions of the seedbed following fire, as well as the infiltration rate.

Intense fires burning under extreme environmental conditions of low soil moisture and heavy fuels can superheat soil to a greater depth, consuming soil organic matter, volatilizing plant nutrients, and producing additional effects caused by precipitation, runoff, and erosion. Intense fires that can occur within the planning area under either alternative can affect the structure and characteristics of the soil profile and the inherent fertility.

There is a potential for hydrophobic, or water repellent soils to occur after an intense wildfire involving heavy fuels. Fire-induced water repellency of soils can accelerate erosion and reduce plant-available soil moisture. However, these conditions have not been directly observed or monitored within the resource area, and would not be expected as a common occurrence. The only sites in the planning area where water repellency is likely to occur are under dense stands of pinyon-juniper with heavy litter accumulations, and in coarse-textured, sandy soils that have low soil moisture. Water repellency of soils could also occur on sites occupied by sagebrush.

Environmental Consequences, Proposed Action: Under the proposed alternative, the number of acres burned is expected to increase, except in areas with sage-grouse priority habitat. Most of the soils in the planning area can support this additional fire without increasing the risk of potential significant impacts. Accelerated levels of runoff and erosion would be anticipated following fire, especially on steep slopes with fine soil textures. These impacts to the soil would be compounded by heavier fuels, steeper and longer slopes, and more complex topography within the burned perimeter. An intense rainfall after the fire could also impact the soil.

This alternative would slightly increase short-term negative impacts to soils because of the increased use of managed fires in certain areas. Larger fires would mean that larger areas would be impacted. The pinyon-juniper communities in the C and D polygons would be the areas most

susceptible to high levels of runoff and erosion related to high fire intensity. However, because the proposed Fire Management Plan contains mitigating measures to ensure that all managed fires stay within set prescription boundaries, there would be minimal negative impacts on soils under the proposed action. The prescription parameters are designed to limit fire from burning under extreme conditions, which would provide a reasonable degree of protection to the soil resource. The constraints placed on the size of fire within the C 9 polygon would also help to limit impacts to soils. The landscape in this area is made up of complex topography and highly erosive soils. The constraints on fire size would ensure that a catastrophic stand replacement fire does not damage or destroy the soils in this area.

Environmental Consequences, No Action Alternative: There would be no significant difference in impacts to the soil resource in the planning area under this alternative, although it might provide some short-term benefit to the soil resource by somewhat limiting many of the fire-induced impacts discussed above. However, without periodic fire, many sites within the planning area would continue to accumulate fuels, resulting in larger, more intense fires over the long term. Additionally, preventing fire on many pinyon-juniper sites in climax or late-seral stage would prevent portions of these communities from returning to early grassland successional stages. Climax communities are not the most productive vegetation communities, and in the pinyon-juniper type, a limited understory of herbaceous plants develops with maturity and stand decadence. The lack of interspace vegetation (grasses and forbs) in these mature communities results in high rates of accelerated erosion and runoff. By contrast, when interspace vegetation is present, it serves as a fine fuel to maintain the typical fire recurrence interval. Consequently, as pinyon-juniper dominates a site and matures unnaturally with fire suppression, more extreme climatic conditions are needed to sustain fire, resulting in fewer but more intense fires that can damage the soil resource.

Environmental Consequences, Cumulative Impacts: The continuation of fuels management efforts as described in the proposed alternative should lead to a trend of less severe wildfires. This would result in fewer impacts to soil quality, including microbial populations, soil temperatures and the chemical and physical structure of the soil. The flexibility of the proposed alternative would continue to allow for high levels of suppression in areas where fire has not played a significant role in the past and in areas with sensitive soil.

Fire management and fuel reduction actions planned under the proposed alternative would improve soil resources and reduce erosion potential in the long term by fostering a healthy, native understory. A decrease in the potential for destruction of biological crusts due to severe fire events would also reduce the erosion potential. Planned actions of prescribed fire and non-fire fuel treatments under the proposed alternative would continue to reduce the likelihood of severe wildfires that result in soil structure loss and altered porosity and infiltration rates. Over time, as fire returns to a more natural pattern, there would be fewer potential indirect impacts from large, severe wildfires such as sedimentation of streams and reservoirs from wind and water erosion, and fugitive dust from wind erosion.

Mitigation: Burned areas within pinyon-juniper, mountain shrub and sagebrush communities that are lacking desirable perennial grass vegetation will be seeded. Relatively small fires may have sufficient vegetation growing on the perimeter to provide a natural seedbank if grazing systems are compatible with desirable plant seed production. However, it may be necessary to



seed with adapted plant species mix in the fall following fire or prior to spring germination period.

### 3.2.4 Water Quality, Surface

Affected Environment: Watersheds, rivers and stream are ecologically dynamic interfaces of atmosphere, soils, and water. Healthy watersheds capture precipitation and runoff, store water in the soil (or bedrock) profile, and release it slowly back into the landscape surface waters. Most of the water supply to these watersheds comes from snowmelt during the spring and early summer months and precipitation from high-intensity convective storms throughout the spring, summer and fall. There are also ephemeral drainages throughout the planning area that flow periodically during the year. Additional information on the specific watersheds and stream networks is found in the preceding Surface Water Hydrology section.

The Federal Water Pollution Control Act of 1972 and Clean Water Act of 1977 and subsequent amendments/revisions are the predominant federal legislations that direct management of water quality on BLM-administered lands. CWA mandates restoration and/or maintenance of the chemical, physical, and biological integrity of our nation's waters, while Section 303 primarily dictates further compliance to state and local water quality standards.

The Colorado Water Quality Control Act gives the authority to the Colorado Water Quality Control Commission to classify and assign numeric standards to state waters. State waters are classified for the present beneficial uses of water, or the beneficial uses that may be reasonably expected in the future. The classifications for beneficial uses include: aquatic life, recreation, agriculture, and water supplies for various purposes.

The numeric standards are assigned to define the allowable concentrations of various parameters under the following categories: physical and biological, inorganic, and metals. The numeric standards for water temperature which could be affected by wildland fire are applicable for the entire plan area, which states, in part: "Temperature shall maintain a normal pattern of diurnal and seasonal fluctuations with no abrupt changes and shall have no increase in temperature of a magnitude, rate, and duration deemed deleterious to the resident aquatic life (Colorado Department of Health, 1999)."

The Colorado Water Quality Control Commission has included a narrative statement in the Basic Standards for all surface waters that states, in part: "all waters (except in wetlands and/or except where authorized by approved permits, certifications, or plans of operation) shall be free from substances attributable to human caused point or nonpoint source discharges in amounts, concentrations, or combinations that:

1. Can settle to form bottom deposits detrimental to the beneficial uses.
2. Are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.
3. Produce a predominance of aquatic life (Colorado Department of Health and Environment)."

Both sediment and nutrient loading in surface waters could result in violations of the above standard. Sediment from accelerated soil erosion and elevated levels of nitrogen and phosphorous from ash constituents are common in receiving surface waters after wildfires. Table 2 on the following page shows the stream segments within the planning area which have been identified by the state as being affected by elevated levels of sediment or nutrients:

**Table 2.** Clean Water Act Section 303(d)-listed streams in the planning area

<b>Stream Segment</b>	<b>Miles Affected</b>	<b>Clean Water Act Section 303(d) Impairment</b>	<b>303(d) Priority</b>
Yampa River, Elkhead Creek to Green River	134.2	Fe(Trec)	H
Fortification Creek from North and South Fork to the Yampa River	36.9	Se	L
Mainstem of Vermillion Creek, including all tributaries and wetlands, from the Colorado/Wyoming border to a point just below the confluence with Talamantes Creek.	15.6	Aquatic Life (provisional)	L
All tributaries to Yampa River except for specific listings, on USFS land	5.1	Sediment	L
Elk River source to Yampa River	6.8	<i>E. coli</i>	H
Dry Creek including all wetlands and tributaries from source to the Yampa River	102.7	Se	L
Sage Creek, Grassy Creek and tributaries	4.6	Se	L
Mainstem of Elkhead Creek and tributaries Calf Creek and 80A Road on the Dry Fork of Elkhead Creek, to the confluence with the Yampa River	89.9	Aquatic Life (provisional)	L

Source: Colorado Department of Public Health and Environment, and BLM EGIS database

**Environmental Consequences, Proposed Action:** Under both the Proposed Alternative and No Action Alternative, all fire activities would be conducted in accordance with existing Colorado laws for water quality. Specifically, all fire activities must comply with the applicable water quality regulations in The Colorado Water Quality Control Act, and they would be in conformance with the classifications and numeric standards for water quality established by the Colorado Water Quality Control Commission.

Under the proposed alternative, surface water quality in the planning area would be positively impacted over the long term. The stream segments that are listed by the Colorado Water Quality Control Commission as impaired might receive some additional sediment and nutrients in the short term as a result of managing wildfires for resource benefit. However, the additional acreage burned as a result of the proposed action would be managed. Stream segments that might be monitored or evaluated for sediment because of their previous listing on 303d lists might have elevated sediment levels resulting from a recent fire or fire disturbance with persisting hydrologic impacts. Coordination with the State should include recent fire activities within the affected area of any segment that is to be monitored.

A potential short-term impact of increased stream water temperatures could result from the proposed alternative, but only Beaver Creek and Willow Creek have large riparian systems with extensive woody species that could influence stream temperatures. In all likelihood fires that would threaten to burn these riparian systems would be outside the established prescriptive parameters in the Fire Management Plan. The few large stands of cottonwoods that are located on public lands would be protected from fire.

Environmental Consequences, No Action Alternative: Surface water would be at risk from soil disturbance and increased erosion potential related to wildfire occurring in sage-grouse habitat, because there would be no guidance to limit wildfire size in these areas. However, even under this alternative, there would be no significant impacts to the surface water quality of the planning area beyond those currently experienced.

Environmental Consequences, Cumulative Impacts: Disturbance associated with prescribed fire and non-fire fuel treatments would be evaluated through an environmental planning and review process that would minimize impacts related to increases in surface runoff, soil loss, and sediment input to surface water. Often these impacts are short term and conditions return to pre-fire levels once vegetation is re-established. Over the long term, a trend toward fewer severe wildland fires would increase soil stability and enhance overall stream bank and channel stability as well as health and functioning of watersheds. Some areas would see more sustainable stream bank vegetation, which would also increase bank stability. Similarly, planned fire actions and eventual restoration of natural fire regimes would improve water quality by reducing the risk of high-severity wildfire and promoting native vegetation types.

Mitigation: The water quality impacts related to wildland fire result from accelerated levels of erosion and runoff, the mitigation for water quality is the same as discussed in the "Soils" Section and are considered to be Best Management Practices.

### **3.3 BIOLOGICAL RESOURCES**

#### **3.3.1 Invasive/Non-Native Species**

Affected Environment: Noxious weeds are present throughout the LSFO management area. Species off of Colorado's C and B Lists of Noxious Weeds can be found in spot locations and dense infestations. The most common noxious weeds in the area include downy brome (cheatgrass), halogeton, hoary cress (white top), Canada thistle, scotch thistle, musk thistle, bull

thistle, Russian knapweed, spotted knapweed, leafy spurge, hound's tongue, Dalmatian toadflax, yellow toadflax, perennial pepperweed (tall whitetop), tamarisk and Russian olive. A complete weed inventory of the field office has not yet been completed.

Noxious weeds may affect the environment by altering soil properties, depleting soil nutrients, altering the composition of native plant communities, altering migration and use by wildlife, changing seasonal water flows, and increasing run off. Noxious weeds can also detract from recreation sites and property values.

The LSFO recognizes that the introduction and spread of invasive weed species is a serious threat to ecosystem health, and that some invasive weeds, such as cheatgrass (*Bromus tectorum*) actually increase the threat of wildland fire by contributing to the buildup of highly flammable fuels. Additionally, these weeds readily establish in highly disturbed areas, including burned areas. As such, invasive species prevention and management is a component of, and complementary to, the fire program's mandate to help ensure ecosystem health and restore altered ecosystems to a more natural state.

Management and control of these weeds are implemented through coordinated efforts with Moffat County Pest Management, Routt County weed department, grazing permittees, and multiple weed control partnerships. All facets of IPM are implemented through the LSFO noxious weed control program.

Environmental Consequences, Proposed Action: Access and management of public lands for dispersed recreation, hunting, livestock grazing management, livestock and wildlife movement, fire management as well as wind and water, can cause weeds to spread. Activities that create disturbance, as well as equipment associated with these activities, provide an opportunity for weed infestations to spread or new infestations to establish. Additionally, during these types of activities where users and equipment would be moving between locations, seeds from one infestation could be carried to a site or away from the site causing a spread to other areas and locations.

Suppression of wildland fire would reduce the opportunity for weeds to invade by reducing the number of acres disturbed by fire but may increase the opportunity for introduction or spread in relation to the human activity and equipment used during suppression. Prescribed fires and Non-fire fuel treatments would include weed inventory data during the planning stages to mitigate any weed infestation concerns. Encouraging the growth and productivity of desirable vegetation would typically inhibit the re-establishment or introduction of invasive weeds. The degree and type of rehabilitation utilized would depend upon the nature and severity of the weed population prior to the fire. The design features included with the Proposed Action provide recommendations and mitigation for weed management to reduce the spread and occurrence of weeds post-fire.

Environmental Consequences, No Action: The no action alternative is very similar to the Proposed Action with the exception of the incorporation of the design features to mitigate and monitor for weed infestations.

Cumulative Effects: While the potential impact associated with wildfire is difficult to estimate, any potential increase in weed infestations from wildfire management, prescribed fire or non-fire fuels treatment would be at an acceptable level if the design features are effectively implemented.

Mitigation: None

### **3.3.2 Special Status Animal Species**

Affected Environment: The Little Snake resource area provides habitat for several BLM sensitive species and ESA listed and candidate species. Critical habitat for bonytail, humpback chub, razorback sucker and Colorado pikeminnow has been designated within the boundary of the LSFO. Potential habitat for Greenback cutthroat trout, Mexican spotted owl, Canada lynx, black-footed ferret and yellow-billed cuckoo is located in specific areas within the resource area.

BLM sensitive species that are known to occur on BLM lands within the LSFO include: greater sage-grouse (also an ESA candidate species), white-tailed prairie dog, northern goshawk, burrowing owl, ferruginous hawk, mountain plover, peregrine falcon, bald eagle, long-billed curlew, American white pelican, Brewer's sparrow, Columbian sharp-tailed grouse, bluehead sucker, flannelmouth sucker, mountain sucker, roundtail chub, Colorado River cutthroat trout, midget faded rattlesnake, northern leopard frog and Great Basin spadefoot.

Environmental Consequences, Proposed Action: Wildfire suppression would lead to water depletions from the Colorado River basin, however, most suppression efforts would fall under BLM Colorado's Programmatic Biological Assessment (PBA) for water depleting activities (excluding fluid minerals development) on BLM lands in the Colorado River basin in Colorado (BLM 2008).

In response to BLM's PBA, the U. S. Fish and Wildlife Service (FWS) issued a Programmatic Biological Opinion (PBO)(ES/GJ-6-CO-08-F-0010) on February 25, 2009, which concurred with BLM's determination that water depletions are "Likely to Adversely Affect" the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. Likewise, use of water for fire suppression is also likely to adversely affect designated critical habitats for these endangered fish along the Green, Yampa, White, Colorado, and Gunnison rivers. However, the FWS also determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and aid in recovery efforts for these endangered fishes resulting from water depletions from the Colorado River Basin. The PBO addresses internal and external BLM projects including impoundments, diversions, water wells, pipelines, and spring developments. The FWS determined that projects that fit under the umbrella of the PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion

impacts to the Upper Colorado River Basin if they deplete relatively small amounts of water (less than 100 AF) and BLM makes a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by each project. The PBO instructed BLM to make an annual payment to the National Fish and Wildlife Foundation (NFWF) to cover all BLM authorized actions that result in water depletions. Any use of water would be entered into the LSFO water depletion log which will be submitted to the Colorado State Office at the end of the Fiscal Year. The CSO is responsible for paying depletion fees based on the annual statewide total. Emergency Section 7 consultation would be conducted for any suppression effort that was not covered by the programmatic BO.

Section 7 consultation was completed for the LSFO FMP as a part of the LSFO RMP consultation. Conservation measures specific to fire and fuels management were development during the consultation process and have been incorporated into this EA.

The continuation of the fire plan with minor changes to the polygons would have minimal impacts to BLM sensitive species and their habitat. Design features have been built into the FMP to reduce potential negative impacts in each polygon. Managed wildland fires would only be allowed to burn under set prescriptive parameters that minimize the risk of catastrophic fires. Management objectives and constraints which would limit negative impacts have been identified for each polygon, such as limiting fire size, avoiding fires in weed infested areas and rehabilitating post fire. The primary difference in the Proposed Action and the No Action Alternative is that several polygons in sage-grouse habitat have been changed from "C" polygons to 'B' polygons. This would prioritize suppression efforts in much of the sage-grouse habitat across the LSFO and would be beneficial to conserving large blocks of intact sagebrush. Brewers sparrow, Columbian sharp-tailed grouse and several other sensitive species that utilize sagebrush habitats would also benefit.

Environmental Consequences, No Action Alternative: Impacts to T&E and BLM sensitive species and their habitat would be similar to impacts described in the proposed action. The major difference in the two alternatives is a difference in acreage in each polygon type and therefore the amount of acreage available for managed fire versus suppression.

Environmental Consequences, Cumulative Impacts: Ongoing land use activities in the LSFO that potentially impact T&E and BLM sensitive species or their habitat include conversion of habitat, oil and gas development, mining, livestock grazing and recreation (primarily hunting). The proposed action and incorporated design features should not add additional impacts or threats to special status animal species populations beyond those that already exist.

Mitigation: None

### **3.3.3 Special Status Plant Species**

Affected Environment: The proposed project area contains the following populations of plants listed as sensitive by BLM Colorado; Duchesne milkvetch (*Astragalus duchesnensis*), Caespitose Cat's-eye (*Cryptantha caespitosa*) previously known as tufted cryptantha (*Oreocarya*

*caespitosa*), Woodside buckwheat (*Eriogonum tumulosum*), narrow leaf evening primrose (*Oenothera acutissima*), Yampa beardtongue (*Penstemon acaulis* var. *yampaensis*), and Gibbens' beardtongue (*Penstemon gibbensii*). While these species are not protected under the Endangered Species Act (ESA), their rarity and potential for listing has resulted in recognition by BLM Colorado that proactive conservation measures are necessary to reduce or eliminate threats, minimizing the likelihood of and need for listing of these species under the ESA. BLM would take all necessary actions to mitigate any adverse impacts to existing populations of these species. In management polygons where there are existing sensitive plant populations, BLM will make every effort to minimize surface disturbance, and limit the use of heavy equipment to existing roads and trails. This will reduce the likelihood of direct impacts to individual plants or populations.

The proposed project area contains historical populations of the following plants listed as sensitive by BLM Colorado: Debris milkvetch (*Astragalus detritalis*), Uinta Basin spring parsley (*Cymopterus duchesnensis*), Singlestem buckwheat (*Eriogonum acaule*), Ephedra buckwheat (*Eriogonum ephedroides*), Duchesne buckwheat (*Eriogonum viridulum*), Colorado feverfew (*Parthenium ligulata*), rock tansy (*Sphaeromeria capitata*), Bessey locoweed (*Oxytropis besseyi* var. *obnapiformis*), and strigose Easter-daisy (*Townsendia strigosa*). While these species are not known to currently exist within the planning area, should populations be identified during the life of the planning document those populations will be given the same protections to mitigate any adverse impacts. These protections will be identified and carried forward in the annual FMP implementation plan. Similarly, if any updates to the State Directors list occur, the change in management direction would be documented in the annual FMP implementation plan.

Within the boundaries of the project area there is one federally listed threatened species, Ute ladies'-tresses (*Spiranthes diluvialis*). Ute ladies'-tresses orchid is a perennial, terrestrial orchid that is typically 6 to 20 inches tall arising from tuberous-thickened roots. The flower consists of a few to many small white to ivory flowers arranged in a spike arrangement at the top of the stem. Ute ladies'-tresses orchid first appears above-ground as a rosette of thickened grass-like leaves that can be difficult to distinguish from other plants, but typically blooms from late July to August. Ute ladies'-tresses orchid reproduces by seed. The orchid may not flower every year and some individuals may remain dormant underground. Fluctuations in mature flowering adults do not necessarily correspond to population fluctuations or indicate habitat alterations.

Two populations of Ute ladies'-tresses orchids have been observed in Moffatt County within the Upper Flaming Gorge Reservoir Watershed, along the Green River from Browns Park through Lodore Canyon (Fertig et al. 2005). One population is within Dinosaur National Monument, the other is within Browns Park National Wildlife Refuge (Fertig et al. 2005). Critical habitat has not been, nor is expected to be, designated for the Ute ladies'-tresses orchid.

The population within the Browns Park National Wildlife Refuge is included within this planning effort. Habitat exists along the Green River downstream of Grimes Pump, consequently bank disturbing activities will be limited to avoid potential impacts. Coordination with either the Browns Park National Wildlife Refuge Manager or a resource advisor familiar with the threatened plant habitat will occur to avoid disturbance and suppression impacts within

a 50 meter buffer. This buffer is only relevant to the Browns Park National Wildlife Refuge and does not extend to the private land in the vicinity.

Potentially suitable habitat exists for the Ute ladies'-tresses orchid on BLM lands within the project area primarily along the Yampa River. However, at this time no existing populations of this species have been identified on BLM-administered lands. Section 7 consultation was completed for the LSFO RMP. A determination of *may affect, not likely to adversely affect* was found for Ute ladies'-tresses. The USFWS concurred with this determination (Biological Assessment and concurrence letter are on file at the LSFO). In accordance with BLM Policy, the LSFO is currently determining the occurrence, distribution, population, and habitat condition of this species on BLM-administered lands within the project area. The LSFO contracted CNHP (Colorado Natural Heritage Program) to model and survey potentially suitable habitat for the Ute ladies'-tresses orchid. Habitat surveys for Ute ladies'-tresses in the Yampa River basin included stream, river and spring-fed sites. Stream surveys were conducted along Vermillion Creek, river surveys were conducted on the Little Snake and Yampa Rivers, and spring surveys were conducted at historically known spring sites. Surveys were conducted in August of 2014, and although several of the surveyed sites provide potential habitat for Ute ladies'-tresses, surveys did not document any populations. Potential habitat is considered as potentially suitable based on suitable structure necessary to support the Ute ladies'-tresses, but survey sites could be impacted by one or more threats which diminish site potential for Ute ladies'-tresses. This species is protected wherever found, and any populations identified in the future through additional surveys will require Section 7 consultation.

This species is threatened primarily by habitat loss and modification, although its small populations and low reproductive rate make it vulnerable to other threats. The riparian and wetland habitats required by this species have been heavily impacted by urban development, heavy grazing, stream channelization, water diversions, and other watershed and stream alterations that reduce the natural dynamics of the stream system, recreation and invasion of habitat by exotic plant species (USFWS 1995b). Since this orchid is supported by moist soils through the growing season, water depletions that reduce the amount of water for flooding or wet meadow maintenance could potentially impact this species. Any water depletions as a result of suppression actions should be documented and reported to a resource advisor, or Browns Park National Wildlife Refuge Management.

Environmental Consequences, Proposed Action: The incorporated design features of the Proposed Action, if selected, should avoid potential impacts to sensitive plant species and their habitat. Most suppression activities do not result in surface disturbance during the critical growing season of plant species so impacts are limited due to the timing and duration of wildland fire. Direct impacts due to removal of vegetation to mineral soil would be avoided by implementing proposed design features.

Environmental Consequences, No Action Alternative: Any potential impacts analyzed in the last FMP Implementation update would still occur.

Environmental Consequences, Cumulative Impacts: Sensitive plant species within the proposed project area owe their rarity to unusually specific habitat requirements rather than widespread



disturbance or loss of available habitat. Most populations of BLM sensitive plants species are primarily affected by factors such as herbivory from livestock and wildlife, off-highway vehicle use, climatic fluctuations, and development, construction of range improvements and other capital improvements can result in highly localized loss of habitat and individual plants or local populations. The proposed action and incorporated design features should not add additional impacts or threats to special status plant species populations beyond those that already exist.

Mitigation: None

### 3.3.4 Upland Vegetation

Affected Environment: This section will focus on shrub and grass dominated upland communities. See 3.5.2, Forest Management, for the discussion of upland forest types.

**Sagebrush:** Communities dominated by sagebrush (*Artemisia* spp.) are among the most extensive and widespread within the LSFO, with 29.6% of all plant communities falling into this category. There are several types of sagebrush communities within the planning area.

#### *Wyoming Big Sagebrush/Grassland*

The Wyoming big sagebrush/grassland is a common vegetation cover type in northwest Colorado. It occurs in shallow to moderately deep coarse soil types at lower elevations between 6,000 and 7,500 feet, giving way to basin big sagebrush in deeper and clayier soils, and to mountain big sagebrush in areas above 6,500 feet that are within the 9- to 16-inch annual precipitation zone (Knight 1994). Shrub height varies from as little as 8 inches on shallow sites to around 30 inches in deeper soils. Canopy cover is not as extensive as for either basin or mountain big sagebrush, usually topping out between 30 to 40 percent.

Wyoming big sagebrush often appears as the dominant plant in mosaic communities intermixed with other shrubs and open grasslands. In shallow, rocky to gravelly soils, Wyoming big sagebrush may be co-dominant with black sagebrush, green rabbitbrush, and sometimes winterfat. Grass and forb species vary depending on soil texture, aspect, and slope. Common grass and grass-like species include bluebunch and thick spike wheatgrass, Sandberg and mutton bluegrass, Indian ricegrass, needle-and-thread, threadleaf sedge, and bottlebrush squirreltail. Common forbs include phlox, Hooker sandwort, buckwheat, penstemon, Indian paintbrush, globemallow, and prickly pear cactus. Wyoming big sagebrush is the most frequently eaten sagebrush species and is a staple for pronghorn and greater sage-grouse. It is also one of the dominant species found on antelope and mule deer-crucial winter ranges. Fire is an important component of all sagebrush-dominated plant communities. Depending on the nature of the site, the fire return interval can be between 25 and 100 years (Knight 1994).

#### *Basin Big Sagebrush*

Basin big sagebrush is found in moderately deep to deep soils of all soil textures in zones of 10 to 16 inches of annual precipitation (Beetle 1960). It occurs as pockets within Wyoming big sagebrush and Gardner saltbush communities, as the dominant plant type along valley

bottoms and canyons, and along isolated ephemeral washes. This subspecies of big sagebrush may reach 12 feet in height, with canopy cover reaching 70 percent.

Basin big sagebrush can intermix with serviceberry, green and rubber rabbitbrush, snowberry, bitterbrush, silver sagebrush, and mountain mahogany, depending on the soil depth, annual precipitation, and elevation. Grasses occurring in these communities include basin wildrye, green needlegrass, Idaho fescue, thick spike wheatgrass, Kentucky and mutton bluegrass, and bottlebrush squirreltail. Common forbs include bluebells, groundsel, wild onion, violet, buttercup, false dandelion, buckwheat, penstemon, Indian paintbrush, globemallow, and prickly pear cactus.

Basin big sagebrush is not a very palatable forage, and usually shows little or no use, even in extreme winters when use levels of other plants is severe; however, it can serve as hiding and thermal cover for mule deer and elk and as habitat for other wildlife species. In some areas, it also provides critical winter habitat for greater sage-grouse when snow covers most other shrubs. Basin big sagebrush often increases in density and cover with livestock overgrazing, and serve as interruptions in the fire cycle. To increase diversity in basin big sagebrush, prescribed fires and chemical and mechanical treatments are employed, resulting in increases of grasses and other understory plants.

#### *Mountain Big Sagebrush/Grassland*

Mountain big sagebrush is located in shallow to moderately deep soils at elevations above 6,500 feet, in 12- to 20-inch annual precipitation zones. Mountain big sagebrush also occurs as smaller plant communities at the lower mountain elevations, and intermixes with aspen and conifer woodlands at the periphery of mountain ranges. Shrub height varies from 10 to 30 inches, with canopy cover reaching 50 to 60 percent.

Mountain big sagebrush is usually the dominant shrub in foothill and mountain sagebrush communities, with bitterbrush, serviceberry, snowberry, and mountain mahogany providing subdominant brush diversity. Grasses include Idaho fescue, king spike fescue, green and Colombian needlegrass, Kentucky, mutton, and big bluegrass, elk sedge, and Ross' sedge. Common forbs found in these areas include Indian paintbrush, globemallow, lupine, larkspur, penstemon, and Oregon grape.

Mountain big sagebrush is palatable to wildlife, although browsing is limited during the winter when these habitats become unavailable because of snow. Following fire, mountain big sagebrush reestablishes as the dominant species more quickly than other sagebrush types, often providing dense canopy cover after only 20 to 30 years. The natural fire recurrence interval in this sagebrush type is 25 to 75 years.

**Grassland:** The 11,804 acres of grassland managed by BLM occur in the eastern one-third of the LSFO. On sandier soils, where water is more available and soil, climate, or water availability restricts shrub establishment, desert grasslands commonly occur as a variant of shortgrass prairie. Common grass species include thick spike wheatgrass, slender wheatgrass, bluebunch wheatgrass, Indian ricegrass, needle-and-thread, Sandberg bluegrass, and sand dropseed. Other shrubs and forbs growing among the grasses are sand sagewort,

phlox, Hooker sandwort, bud sagebrush, fringed sagebrush, Wyoming big sagebrush, rubber rabbitbrush, horsebrush, globemallow and prickly pear cactus (Knight 1994).

Saltgrass meadows occur in shallow depressions or adjacent to playa lakes where ground water is near the desert surface. These areas are characterized by inland saltgrass, alkaligrass, alkali sacaton, and, in wetter areas, alkali cordgrass (Knight 1994). Desert grasslands provide palatable forage and often provide islands of diversity within the desert shrublands.

Crested wheatgrass was planted in areas to mitigate disturbances by roads, well pads, oil and gas production activities and vegetation treatments, such as brush beatings and prescribed burns. These plantings were needed to provide ground cover, prevent erosion, and reduce the influx of weeds. These areas are now dominated by crested wheatgrass with native plants voluntarily coming in, such as big sagebrush, rabbitbrush, globe mallow, slender wheatgrass, thick spike wheatgrass, bluebunch wheatgrass and needle-and-thread. Native grasses have been used to reseed similarly disturbed areas for the last several years. These grasses include slender wheatgrass, thick spike wheatgrass, Indian ricegrass, and needle and thread.

**Mountain Shrub:** Mountain shrub communities include bitterbrush shrub steppe, mesic upland shrub step, xeric upland shrub steppe, and mountain mixed shrub/pinyon-juniper community types. These areas are important wildlife summer and transition ranges, as well as spring, fall, and summer livestock ranges. They lie between the high-elevation mountain meadow and open park ranges and the low-elevation desert rangelands. The four plant communities described below comprise 11.8 percent of BLM-managed land and occur generally in the eastern one-third of the LSFO or in the southern half of the western two-thirds of the LSFO.

Bitterbrush-dominated plant communities exist on sand and sandy loam soils in the 10- to 14-inch annual precipitation zones. Bitterbrush varies in height depending on soil depth, precipitation, and browsing. It might appear as a low spreading shrub about 6 inches tall or as a tall shrub reaching 6 feet in height. Bitterbrush is often co-dominant with mountain or basin big sagebrush and could be intermixed with silver sagebrush, basin big sagebrush, and rabbitbrush in deep sandy soils. At higher elevations and higher precipitation levels, it occurs in mixtures with sagebrush, snowberry, serviceberry, mountain mahogany, and an occasional chokecherry. Herbaceous plants associated with bitterbrush include grasses such as needle-and-thread, prairie sandreed, Indian ricegrass, sand dropseed, and thick spike wheatgrass and forbs such as lupine, penstemon, sego lily, wild onion, larkspur, and prickly pear cactus.

Bitterbrush is probably the most important winter browse species for deer and pronghorn, and is used by elk and cattle in the fall and spring. It responds best to sagebrush-killing fires (burns occur in the fall and spring), although it's resprouting response is fair to moderate at best even under such conditions. Hot summer fires will kill bitterbrush, but some resprouting may occur under cooler burning fires in the spring or fall, especially when the burn is immediately followed by precipitation.

Kinnikinnick, serviceberry, chokecherry or a combination of these species dominate the mesic upland shrub steppe, often in conjunction with snowberry, currant, skunk bush sumac, and Wood's rose. These shrubs could reach 10 to 15 feet in height, occurring in dense stands or in scattered patches, often adjacent to aspen or willow. Understory grasses include basin wildrye, green needlegrass, Columbia needlegrass, and Kentucky bluegrass, and forbs include bluebell, columbine, aster, violet, elkweed, chickweed, and stinging nettle. This community provides hiding and thermal cover for deer, elk, and other wildlife species. The dominant shrubs provide sufficient forage for browsing animals when their softer leaves and shoots are within reach. These shrubs will reestablish following fire, often in less dense patches, making them more accessible to wildlife and livestock.

Mountain mahogany dominates the xeric upland shrub steppe community in the central and western portions of the LSFO on dry rocky slopes or in very shallow, undeveloped soils in the 10- to 14-inch precipitation zone. It occurs, as both the dominant shrub and as an understory of juniper, at higher elevations, mixing with bitterbrush, snowberry, serviceberry, green rabbitbrush, broom snakeweed, and Wyoming big sagebrush. Commonly associated herbaceous plants include bluebunch wheatgrass, Indian ricegrass, Sandberg bluegrass, and mat-forming forbs such as phlox, buckwheat, locoweed, Hooker sandwort, goldenweed, and milkvetch. Mountain mahogany is an important wildlife fall and winter forage.

Gamble oak dominates much of the eastern slopes of the LSFO. This plant community is often intermixed with large aspen colonies in the lower foothills below expansive conifer forests. Other trees and shrubs found in these areas are juniper, mountain mahogany, shrubby cinquefoil and big sagebrush. Herbaceous plants include Indian paintbrush, columbine, bluebunch wheatgrass and green needlegrass. These areas are important year-round transitional and winter habitat for deer and elk. Fire typically lessens the density of these shrub stands, allowing grasses and other herbaceous plants to increase, while still providing wildlife browse. When the shrub cover is removed, herbaceous production is greatly increased.

**Saltbush:** The saltbush vegetation type is perhaps the most arid vegetation type in the intermountain West (Knight 1994). Gardner saltbush dominates the salt desert shrub community type and, in some instances, makes up to 90 percent of the vegetation cover. These areas are characterized by accumulations of salt in poorly developed deep soils. Soils in these areas usually have a pH of 7.8 to 9, which restricts the uptake of water by all but the most salt-tolerant plants (halophytes). Soil textures can be sandy loam, sandy clay loam, or loam and clay. Salts accumulate around these plants each year with leaf fall. Halophytes function essentially to redistribute salts from the soil depths to the surface, which concentrate salts around the perimeter of the plant, and thereby eliminate competition for scarce water and nutrients from less salt-tolerant plants (Goodin and Mozafar 1972).

Gardner saltbush normally grows no higher than 12 inches and tends to grow along the ground, forming a mat. Subdominant shrubs include birdfoot sagebrush, bud sagebrush, spiny hopsage, greasewood, broom snakeweed, shadscale, basin big sagebrush, rabbitbrush, and winterfat. Grasses associated with these sites are Indian ricegrass, bottlebrush

squirreltail, Sandberg bluegrass, and western wheatgrass. Forbs found in these areas include wild onion, biscuit-root, woody aster, globemallow, halogeton, and prickly pear cactus.

In the LSFO, saltbush covers 32.9 percent of BLM-managed land and is primarily located in the north central portion of the LSFO. Saltbush shrublands occur at elevations between 6,000 and 7,600 feet within the lowest precipitation areas of the LSFO. These areas are typically flat or rolling hills. Excellent examples of this vegetation type exist in the Powder Wash area. Gardner saltbush is a valuable forage species on winter and spring ranges. In spring, Gardner saltbush has higher protein concentrations than does late season alfalfa, and is a preferred livestock forage for lambing sheep and calving cattle.

**Salt Desert Shrub:** Salt desert shrublands are characterized by drought tolerant shrubs, with few grasses and forbs in the understory. The soils of these areas are shallow saline clays and loams. Typical shrubs in these vegetation types are shadscale, four-wing saltbush, spiny hopsage, greasewood, winterfat, broom snakeweed and bud sagebrush. Big sagebrush and rabbitbrush occur in looser and rockier soils and are much less abundant than in the other desert shrub types. Juniper is occasionally found on rocky hills and ridges. Understory vegetation includes globemallow, wild parsley, prickly pear cactus, bluebunch wheatgrass, needle-and-thread, and Indian ricegrass.

The topography of these areas is rough with steeply sloped hills, canyons, and rock escarpments. These areas are often important winter ranges for wildlife and livestock, as they provide forage that is not buried in snow, and the shrubs and rough topography provide cover from wind and predators. The forage of these areas is excellent in the winter, as these shrubs maintain relatively high levels of protein and carbohydrates. This vegetation cover type occurs on 0.3 percent of the lands managed by BLM and is located along the Wyoming border in the western quarter of the LSFO.

#### Environmental Consequences, both alternatives:

**Sagebrush Communities:** This community's response to fire and mechanical fuels treatments is highly dependent upon pre-treatment rangeland health. If the community is healthy and has an adequate amount of native understory herbaceous vegetation, the response to disturbance will result in increased herbaceous plant production. If there is little native herbaceous plant presence, invasive species such as cheatgrass and mustard would likely be dominant after disturbance. In either case, all sagebrush species are easily killed by fire and would not be a significant component of the community for several to many years depending on the species. Mechanical treatments don't typically remove or kill all sagebrush plants; therefore sagebrush can be a significant plant community component much sooner than if burned. A few of the sub-dominant shrub species including winterfat, rabbitbrush, and four wing saltbush would re-sprout following disturbance. On many sandier sites, rabbitbrush can increase in frequency following disturbance until Wyoming big sagebrush eventually takes over and becomes the dominate shrub.

Wyoming big sagebrush takes the longest to re-establish following treatment, taking 15 – 30 years following fire and 10 – 15 years following mechanical treatment before becoming a

significant component of the plant community. Basin big sagebrush is quicker to respond following treatment taking 5 – 20 years to attain a significant presence. This is likely due to deeper soils and more available soil moisture where this species typically occurs. Mountain big sagebrush is the quickest to respond following fire and mechanical treatment, taking 5 – 15 years following treatment to obtain significant frequency and can obtain pre-treatment coverage levels in only a few years following that.

**Grasslands:** Grass dominated sites do not typically carry fire well and many times stop a fire's spread. Fire seasons following good spring growing seasons can experience more spread through grasslands, although fire will be of low intensity. Due to the low intensity and short flame residence time, perennial grass species recover quite well.

**Mountain Shrub:** Most shrub species found in this community re-sprout following fire or mechanical treatment; therefore any treatments are somewhat temporary. Due to the steeper slopes where mountain shrub is dominant, mechanical treatments are unlikely. Fire is likely the only treatment that will affect the mountain shrub community. Shrub coverage will be reduced for 2 – 5 years following fire with a corresponding increase in herbaceous cover and production. Within 10 – 15 years pre-fire shrub coverage levels will likely be obtained.

**Saltbush/Salt Desert Shrub:** These communities typically do not have sufficient plant cover to support fire spread and are not typically targeted for mechanical fuels treatment. The exception to this is thicker areas of greasewood which typically occur along alkaline drainages. Greasewood re-sprouts quickly after fire and obtains pre-fire cover levels within 10 – 15 years. Cheatgrass is often the dominant understory vegetation in these cases and increases in frequency and cover for several years following disturbance.

Environmental Consequences, Cumulative Impacts: The natural fire return interval for the discussed plant communities must be considered when examining cumulative impacts. For the plant communities involved the fire return interval is between 25 and 100 years (forest communities are discussed in the forestry section). When considering strictly plant community dynamics, the ideal amount of treated acres through fire and mechanical means should approximate the natural fire return interval. Other social, budgetary, and environmental factors dictate that this level of vegetation manipulation cannot occur; even though under the proposed action more treated acres could potentially occur than is presently happening. The cumulative effect is that the trend to more shrub and woodland dominated communities will continue and that fires will be potentially more intense over time.

Mitigation: None

### 3.3.5 Wetlands and Riparian Zones

Affected Environment: Wetland and riparian areas comprise only a small portion of the lands managed by the BLM; however, their ecological significance is far greater than their limited physical scope as these systems form some of the most dynamic and ecologically rich portions of the landscape. Riparian-wetlands areas play a significant role in restoring and maintaining the chemical, physical, and biological integrity of the nation's water. Wildlife use in riparian-

wetlands areas is disproportionately more than any other type of habitat. In addition, riparian-wetlands areas are highly prized for their economic values and other uses such as livestock production and recreation. Under natural conditions, riparian and aquatic ecosystems have a high degree of structural complexity, reflective of past disturbances such as floods, fire, ice floes, wind storms, grazing, disease and insect outbreaks.

Nearly 250 miles of streams have been inventoried and documented as riparian resources on lands administered by the Little Snake Field Office. These streams include both perennial and intermittent. The portions of the Yampa River and the Little Snake River riparian systems on public land are not extensive and are largely not in contact with an active floodplain of appropriate size. Mature cottonwood habitat on public lands is nearly nonexistent. Mature willow communities are not extensive. However, younger age classes of willows or early seral stage communities are present in many areas. Much of the bank stabilizing vegetation, or greenline, is comprised of coyote willow, sedges, and rushes. Tamarisk or salt cedar occurs in the upper zone of riparian systems throughout the western landscape, but only in a few areas is it particularly dense.

Lower elevation wetlands are extremely scarce in the planning area and are estimated to comprise less than 200 acres. Most of these occur in the form of wetland draws, especially in the Great Divide area. However, there is a large portion of higher elevation wetlands associated with springs and wet meadows on Cold Springs and Middle Mountains. There are some wetlands in the planning area which are associated with oxbows along the Yampa and Little Snake Rivers, ground water discharge, and seeps from irrigation ditches and irrigated fields. Most wetlands outside of the B1 polygon are comprised of sedge or rush communities.

Agriculture and other developments in riparian areas have reduced the potential for an intense wildfire to occur. Moreover, riparian and wetland areas on public land are unlikely to burn as a result of natural ignition because of their position in the landscape and the low probability of a natural start. However, off site impacts resulting from catastrophic fires could cause degradation to stream channels and associated riparian vegetation during peak flows. Small, narrow systems associated with heavy fuels in a confined area may receive excessive deposits that would degrade the system in the short term.

Environmental Consequences, Proposed Action: The overall, direct impacts of implementing the Proposed Action to riparian zones and wetlands would be minor. The criteria used to determine if a wildfire can be managed for benefit would prohibit fires that could potentially burn a large portion of any riparian area. Since these areas are inherently moist, it would take extended droughts before the riparian or wetland systems would burn. These conditions would be outside the environmental parameters for burning. The proposed Fire Management Plan includes RPMs that would help protect riparian-wetlands resources, although the potential does exist for impacts from wildland fire suppression and other fire management actions. To minimize impacts on riparian health and function, fires in riparian areas would generally be suppressed. However, low-intensity fires could be allowed to burn with some control when riparian area enhancement and stand diversity would be improved. Periodic low-intensity fires may also reduce the likelihood of a severe fire, which would cause greater damage to riparian-wetlands areas.

Proposed RPMs would restrict ground-disturbing suppression activities in the vicinity of riparian-wetlands areas. Short-term impacts of suppression activities could include vegetation damage or loss, increased streambank erosion, and increased sedimentation in streams (resulting in loss of fish habitat and compromised water quality). The loss of streamside vegetation could increase stream temperature, resulting in loss of fish and other aquatic species' habitat. Additionally, non-native plant species found in the planning area generally recover faster than native plant species after a disturbance, increasing fire susceptibility. Potential impacts on riparian areas from heavy equipment would be minimized through initial resource specialist consultation, which would continue throughout the fire event. In addition, emergency stabilization and/or rehabilitation actions would lessen potential impacts from erosion and invasive species.

Environmental Consequences, No Action Alternative: Only minor impacts to riparian and wetland systems within the planning area would result from continuing suppression of fires under the current management plan. These impacts, if realized, would be due to less active suppression of fires and reduction of fuels in greater sage-grouse habitat. However, the riparian areas that are present and most of the other areas with woody riparian plants have very low fire occurrence and do not sustain a fire well under normal conditions.

Environmental Consequences, Cumulative Impacts: Over time, there is good potential for long-term benefits to riparian-wetlands areas under the proposed action. Overall, conditions would improve through the removal of undesirable vegetation, which would lessen the chances of high-severity wildfire and promote the growth and natural succession of native vegetation types.

Wildland fires would be smaller and less severe, resulting in fewer impacts on vegetation and sediment loads, and less alteration of wildlife habitat. Low-intensity fires may be allowed to burn with some suppression control to reduce the likelihood of a severe fire, which would cause greater damage to these areas. A trend toward fewer severe wildland fires would increase soil and channel stability as well as promote health and functioning of the watershed. Some areas would see an increase in streambank vegetation, which would also increase bank stability. Riparian areas would have fewer disturbances from severe wildfires, promoting stability and increased functionality of floodplains, including a lowered impact from flash flooding.

Proposed fire management and fuels reduction actions would improve riparian resources and reduce erosion potential in the long term by fostering a healthy, native understory. The proposed action would allow considerable flexibility in the implementation and timing of planned management actions designed to protect riparian and wetlands resources.

Mitigation: All prescribed fires will be reviewed for riparian resources. Only in rare instances would the riparian vegetation along stream courses be included in a prescribed burn. Where prescribed burns do occur in riparian areas, this will be very limited, or will be done incrementally over small areas to protect cover vegetation and water quality.



### **3.3.6 Wildlife, Aquatic**

Affected Environment: Riparian and aquatic habitats are a minor part of the landscape throughout the planning area, however, they provide important habitat for the majority of species present. The Yampa and Little Snake Rivers, along with perennial creeks provide habitat for a number of fish species, including brook trout, rainbow trout, mottled sculpin and speckled dace. Perennial waterways and smaller, ephemeral creeks, springs and riparian areas provide habitat for amphibians and non-vertebrate aquatic wildlife. Amphibians occurring within the resource area include western chorus frog, tiger salamanders, Great Basin spadefoot toad and northern leopard frogs.

Environmental Consequences, Proposed Action: The continuation of the fire plan with minor changes to the polygons would have minimal impacts to aquatic wildlife species and their habitat. The plan incorporates prescriptions to minimize the risk of catastrophic fire and protect critical habitat that could be destroyed by fire. For example, cottonwoods and other riparian trees would be protected, maintaining important riparian habitat components. In addition, re-vegetation post fire would reduce the potential for erosion and increased sedimentation. The cumulative impacts of the fire management approach would be positive in the long term. Allowing managed fire in the ecosystem could increase the function and quality of streams and riparian systems and improve aquatic habitats in the future by improving the overall health of the landscape.

Environmental Consequences, No Action Alternative: Impacts to aquatic wildlife species and their habitat would be similar to impacts described in the proposed action. The major difference in the two alternatives is a difference in acreage in each polygon type and therefore the amount of acreage available for managed fire versus suppression.

Environmental Consequences, Cumulative Impacts: Cumulative impacts would be similar to those described in the Terrestrial Wildlife and Special Status Animal Species Sections of this EA.

Mitigation: None

### **3.3.7 Wildlife, Terrestrial (Including Migratory Birds)**

Affected Environment: The LSFO includes over 1.3 million acres of BLM managed lands and spans a variety of elevations and vegetation communities. The diversity of vegetation communities provides habitat for a variety of migratory birds, mammals and reptiles. The LSFO is located within two Bird Conservation Regions – Northern Rockies and Southern Rockies/Colorado Plateau. Several species on the USFWS's Birds of Conservation Concern (BCC) list for these regions occupy habitats within the LSFO.

Salt desert communities composed of fourwing saltbush, shadscale, Wyoming big sagebrush, and greasewood are found at lower elevations. These areas may contain colonies of white-tailed prairie dogs, which provide habitat for two BCC listed species, burrowing owls and ferruginous hawks. Extensive shrublands dominate much of the LSFO. Most shrubs in these areas are either

big sagebrush or deciduous mountain shrubs such as bitterbrush and serviceberry. Birds listed on the BCC list that nest in shrublands include: Brewer's sparrow, sage thrasher, sage sparrow and loggerhead shrike. Lower elevation shrublands also provide important winter habitat for pronghorn, mule deer and elk. Several small mammals and reptiles also inhabit shrublands within the LSFO.

Pinyon-juniper woodlands are widely distributed across resource area. Two pinyon-juniper obligate birds on the BCC list are pinyon jay and juniper titmouse. Limited higher elevation aspen stands and coniferous forests are also present within the resource area. These forests provide habitat for two BCC listed species, flammulated owl and Cassin's finch. Woodlands and forests provide thermal relief and security for both big game and small mammals.

Rock outcrops and cliffs provide nesting habitat for a variety of raptor species, including golden eagles, prairie falcons and peregrine falcons. Cottonwood galleries along the Yampa and Little Snake Rivers and their major tributaries provide nesting and winter roosting habitat for bald eagles.

Environmental Consequences, Proposed Action: The continuation of the fire plan with minor changes to the polygons would have minimal impacts to wildlife species and their habitat. Design features have been built into the FMP to reduce potential negative impacts in each polygon. Managed wildland fires would only be allowed to burn under set prescriptive parameters that minimize the risk of catastrophic fires. Management objectives and constraints which would limit negative impacts have been identified for each polygon, such as limiting fire size, avoiding fires in weed infested areas and rehabilitating post fire. All of these design features would make it possible to use fire as a tool to maintain or restore ecosystems. Healthier plant communities promote healthier and more productive animal communities.

Generalist species that use a wide variety of habitats would benefit from allowing managed fires to burn. A mosaic of vegetation that increases edge and creates multi-structured vegetation would be beneficial to several species of wildlife. The patches of early seral stage habitat created by fire would provide an increase in forbs and grasses which are crucial to meet the nutritional needs for many species. Some wildlife species require specialized habitat conditions for one or more stages of their life cycle. The range of conditions and tolerance for change are more narrow for these species and the availability of crucial habitat can limit population size. For example, burning too much shrub habitat could have negative consequences for wintering mule deer. The primary difference in the Proposed Action and the No Action Alternative is that several polygons in sage-grouse habitat have been changed from "C" polygons to 'B' polygons. This would prioritize suppression efforts in much of the sagebrush habitat across the LSFO and would be beneficial to reducing habitat loss and fragmentation in this habitat type. Wildlife species that utilize or depend on sagebrush habitats would also benefit.

Environmental Consequences, No Action Alternative: Impacts to aquatic wildlife species and their habitat would be similar to impacts described in the proposed action. The major difference in the two alternatives is a difference in acreage in each polygon type and therefore the amount of acreage available for managed fire versus suppression.

Environmental Consequences, Cumulative Impacts: Ongoing land use activities in the LSFO that potentially impact terrestrial wildlife or their habitat include conversion of habitat, oil and gas development, mining, livestock grazing and recreation (primarily hunting). In the long-term, the cumulative effect on wildlife from proposed fire management actions would be beneficial to the extent that the proposed actions prevent or reduce the intensity of wildfires and maintain or restore native plant communities. The degree of effect from prevention of wildfires depends on the intensity and extent of the wildfire.

Mitigation: None

### **3.3.8 Wild Horses**

Affected Environment: In 1971, Congress passed legislation to protect, manage, and control wild horses and burros on the public lands (Wild Horse 1971). The Wild Free-Roaming Horse and Burro Act declared these animals to be “living symbols of the historic and pioneer spirit of the West.” The LSFO planning area contains one herd management area (HMA), the Sand Wash HMA. The appropriate management level for the HMA is a range of 163 to 362 adult wild horses.

Environmental Consequences, Proposed Action: Implementation of the NWCFMP would have no direct impacts to wild horses. Short-term effects of wildland fires on the Sand Wash HMA would be the potential for temporary displacement of animals, damage to corrals, water storage devices, shelters, and forage loss. However, the AMR would take appropriate action to protect those structures. Use of non-fire and fire treatment projects could pose a temporary loss of resources during the treatment procedure. Altered herd movement routes and temporary increases in noise could also be short-term effects. Because prescribed fire and non-fire fuel treatments are planned, activities could be designed to minimize impacts.

Under the Proposed Action, the majority of the HMA falls into the C5 polygon. This would leave the majority of HMA acres in a protected status and reduce the impacts from fire, but may increase the potential for suppression impacts such as ground disturbance and human presence. Reduction in fuel loads would occur and post-fire interruption of forage resources would be evident. However, these areas would have less impacts from suppression activities.

Long-term impacts include a decreased potential for severe wildfire from decreased wildland fire suppression and increased fire and non-fire fuel treatments would lead to increased habitat protection and a reduction in loss of corrals, fences, shelters, and watering areas. Impacts from fire or treatment procedures would be positive for wild horses, resulting in an increase in the quantity and quality of forage. Over time, potential loss of wild horse habitat and infrastructure would decrease.

Environmental Consequences, No Action: Under the previous FMP, the Sand Wash HMA was broken into two polygons, C7 and C9. Management of these polygons included protection of the forage base for wild horses and protection of sage grouse leks. Fires would be held to less than 100 acres per fire under both alternatives.

Environmental Consequences, Cumulative Impacts: The following reasonably foreseeable actions could cumulatively affect the wild horses within the Sand Wash HMA:

- Continuing implementation of the Standards for Rangeland Health and Guidelines for Grazing
- Continuing implementation of vegetation treatment on BLM lands in 13 Western states (BLM 1991) and upcoming Vegetation EIS (ongoing planning)
- Regulatory actions, guidance and associated revisions for sagebrush restoration and grazing on public lands
- Vegetation treatment resulting from wildlife mitigation projects (big game winter range, sage grouse habitat restoration)
- Increase in recreational use of BLM lands
- Continued expansion of mineral extraction activities including oil and gas
- Ongoing growth and development throughout the planning area
- Utility corridor development
- Continued and increased noxious weeds infestation on lands adjoining lands administered by BLM
- Continued human-caused and natural ignitions

Mitigation: None

### **3.4 HERITAGE RESOURCES AND HUMAN ENVIRONMENT**

#### **3.4.1 Cultural Resources**

Affected Environment: Sites produced by Native Americans in the Little Snake Field Area (LSFA) are classified into various types. Common site types include camps and lithic scatters. Camps often are denoted by the presence of fire hearths, ground stone artifacts for processing plant foods, and a scatter of flaked stone artifacts that are either discarded tools or debris from their manufacture. Lithic scatters consist solely of flaked stone artifacts. Uncommon types of sites include tool stone quarries, rock art, and open architectural sites.

Sites with remains of Native American architecture include those with evidence of pithouses, wickiups, and tree platforms. Pithouses were semi-subterranean structures used for habitation. When first constructed, wickiups in the LSFA were often conical temporary habitation structures made of a framework of juniper or pinyon branches. Platforms made by securing a series of parallel branches in a pinyon or juniper tree are known in the LSFA. A number of possible functions for such structures have been suggested, included their use as burial scaffolds.

Sites created during Euroamerican occupation of the LSFA are associated with the fur trade, homesteading, ranching and farming, coal mining, and oil and gas drilling. In regard to the fire management plan (FMP), sites with wooden structures are of particular concern. Wooden structures on homesteads include cabins, outbuildings, and dugouts. Wooden mine buildings and wild horse traps are other kinds of historic sites of particular concern in regard to the FMP.

Environmental Consequences, Proposed Action: Wildfires, prescribed fires, and fuel reduction projects pose a number of direct and indirect effects on cultural resources. Direct effects result from fire itself as well as from ground disturbing activities related to fire control and fuel reduction.

Wildfire and prescribed fires pose direct effects to Native American sites. A major concern is that fire can destroy the relatively rare wooden structures that remain from early historic and protohistoric times when Native Americans still inhabited the area. Of secondary concern is the fact that fire moving across campsites and lithic scatters can cause surface flaked stone artifacts to fracture and discolor.

Fire also poses direct effect to Euroamerican sites. The main concern here is that wooden structures on sites that are of historic importance could be destroyed by fire. Wooden buildings and other structures on homesteads, historic mines, etcetera, are subject to destruction by wildfires and prescribed burns. Of secondary concern are the effects of fire moving across common Euroamerican sites, such as trash scatters associated with ranching activities. Fire can affect artifacts on sites of the historic era, including the discoloration of metal, fracturing of ceramics, and melting of glass.

Direct effects to historic and prehistoric sites can also occur from ground disturbing activities related to fighting wildfires, controlling prescribed fires, carrying out fuel reduction projects, and rehabilitating areas affected by wildfire. Ground disturbance results from construction of fire breaks and use of mechanized equipment that can damage surface artifacts and features, such as fire hearths.

Construction of fire breaks has the potential to cause direct effects to cultural resources (historic and prehistoric sites). This concern is greatest when fighting wildfires because the location of wildfires is unpredictable and immediate construction of fire breaks with the use of heavy earth moving equipment is sometimes necessary to protect human life, property, and natural resources. Most BLM land in the LSFA is in Moffat County where, construction of fire breaks using heavy earth moving equipment during inter-agency fire-fighting operations is usually done with county road graders. Construction of fire lines with hand tools is also done when fighting wildfires and preparing for prescribed burns. Hand line construction also can impact surface artifacts and features, but poses less of a concern for cultural resources.

Some fuel reduction projects can pose direct effects to cultural resources. Projects designed to reduce pinyon and juniper encroachment on sagebrush areas involve the use of heavy, tracked or rubber-tired mechanized equipment that destroy trees through mastication. Equipment used in such projects can break surface artifacts and disturb or destroy surface features. Other fuel reduction projects entail the use of hand tools to limb trees and remove the woody understory along with subsequent burning of slash piles. Though less of a concern, fuel reduction projects by fire crews using hand tools might result in the inadvertent destruction of wickiups and fire-damage to surface artifacts from burning of slash piles on sites.

Use of a tractor-drawn "brush beater" to remove sagebrush in order to reduce wildfire fuel and improve habitat for wildlife has been shown to pose little affect to cultural resources if conducted

when the ground is dry. A study by Rupp (1990) suggests that little disturbance to surface artifacts and features occurs when prehistoric campsites are subjected to brush beating.

Fire rehabilitation projects may post some additional effect to the surface of sites already damaged by wildfire. Rehabilitation involves efforts to establish ground cover to prevent erosion following a fire. Burned areas that are at risk for erosion may be seeded with a tractor-drawn piece of equipment that discs the earth and plants seeds of native grasses. Reseeding of areas generally occurs soon after a fire in order to prevent erosion.

Wildfires can also pose indirect effects on Native American sites. Increased erosion from loss of vegetation can impact buried sites. Loss of vegetation could also increase site visibility and unauthorized artifact collection.

Environmental Consequences, No Action Alternative: Environmental consequences for cultural resources of the No Action Alternative in one respect may be less than that expected under the Proposed Action. If wildfires are managed under the existing Little Snake FMP (2000), less acreage would be allowed to burn during wildfires. Therefore, impacts to cultural resources from wildfires and firefighting operations would be somewhat less when considered from a relatively short time frame. On average, about 7,000 acres of land are affected by wildfire in the LSFA each year.

On the other hand, the long-term negative affects to cultural resources from wildfires and firefighting may be greater under the No Action Alternative. A stated goal of the proposed action is to allow monitored wildfires to reduce fuel build-up and decrease the likelihood of large, out-of-control fires. If the proposed action realizes this objective, then large, out-of-control fires that pose a major threat to cultural resources (particularly those with wooden structures) would be less likely to occur in the future.

Environmental Consequences, Cumulative Impacts: Wildfire is an ongoing natural process that has been affecting prehistoric and historic sites since people first inhabited northwest Colorado. The negative effects from fire have had a cumulative effect on cultural resources as fires have continued to burn wickiups and historic structures and affect surface artifacts. If under the proposed action, wildfires are allowed to spread more so than in the past, the negative effect on cultural resources from fire would be expected to increase by a certain amount. On the other hand, if a stated objective of the Proposed Action is achieved and monitored wildfires that are allowed to grow successfully reduce fuel loading, then the negative effect to cultural resources from large, out-of-control fires would be lessen and may result in less cumulative impact to cultural resources over the long-term.

Mitigation: To mitigate potential adverse effects from implementing the NWCFMP on cultural resources, the plan will be carried out under the design features discussed in Section 2.2.2 above. If the decision is made to allow a wildfire to grow while monitoring its spread, a resource advisor and, if warranted, the field area archaeologist will provide input to the fire crew regarding cultural resource concerns. Polygon-specific cultural resource concerns are discussed in the section describing the individual polygons.

## Reference Cited

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1990 A Study of the Effects of Vegetative Manipulation on Cultural Site 5GA1514 in Grand County, Colorado. *In* A Cultural Resource Survey for the Hartman Divide Sagebrush Control Project in Grand County, Colorado. Report prepared for Colorado State Historic Preservation Officer by the Bureau of Land Management, Kremmling Field Office, Kremmling, Colorado.

### **3.4.3 Lands with Wilderness Characteristics**

Affected Environment: Wilderness characteristics are defined in Section 2(c) of the Wilderness Act and incorporated in FLPMA. Under FLPMA, wilderness preservation is part of BLM's multiple use mandate, and wilderness characteristics are recognized as part of the spectrum of resource values considered during land use planning. The Little Snake Record of Decision and Resource Management Plan (RMP), October 2011 identified lands with wilderness characteristics outside existing Wilderness Study Areas (WSAs) as Vermillion Basin (77,069.02 acres), Dinosaur North (45,635.41 acres), and Cold Spring Mountain (30,479.66 acres).

In order for an area to qualify as lands with wilderness characteristics, it must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. In addition, it may also possess supplemental values.

Impacts to lands with wilderness characteristics would be considered significant if there was any degradation of the individual wilderness characteristics (naturalness and outstanding opportunities for solitude and primitive recreation) to the degree the value would no longer be present within the specific area. This analysis is based on the assumption that lands identified as having, or as likely to have wilderness characteristics contain wilderness values (e.g., naturalness, outstanding opportunities for solitude or primitive recreation).

The objective for Vermillion Basin and Dinosaur North, is to manage to protect naturalness, and outstanding opportunities for primitive recreation and solitude. The areas are classified as VRM Class II, where the objective is to retain the existing character of the landscape and the level of change to the characteristic landscape should be low and should not attract attention of the casual observer.

The objective for Cold Spring Mountain is to manage to protect naturalness, and outstanding opportunities for primitive recreation and solitude. The area is classified as VRM Class III, where the objective is to partially retain the existing character of the landscape and the level of change to the characteristic landscape should be moderate and may attract attention but should not dominate the view of the casual observer.

Environmental Consequences, both Alternatives: Wildland fire use would be the preferred method of fuel reduction within the lands managed to protect wilderness characteristics, although some areas could be targeted for limited prescribed fire or clearing, depending on the nature of

the area and the fuel conditions. The presence of work crews, fuels reduction activities (such as thinning and clearing vegetation) and the use of power tools could have short-term, minor impacts to wilderness characteristics, such as solitude and naturalness. Management activities associated with this alternative would result in short-term, negligible to minor impacts due to the presence of work crews, the additional noise associated with fire use and firefighting activities, and the potential use of equipment in or bordering lands with wilderness characteristics. Because work crews would only be present for a brief period of time, areas affected would be small, and with implementation of mitigation measures, recovery of the areas' soils and vegetation would be rapid.

Impacts to wilderness characteristics over the long-term would be beneficial and moderate in intensity as fire is restored to the areas managed to protect wilderness characteristics and the areas return to a more natural range of variability in regards to fire. Fires of mixed severity would be more typical of the historic fire regime and would add to the wilderness characteristics as being shaped and maintained by natural disturbance events such as fire. The effects to wilderness characteristics would be moderate and beneficial due to the reduction in fuel loads, which would reduce the risk of catastrophic wildland fire.

Environmental Consequences, Cumulative Impacts: Implementation of the proposed action would, in the short-term, continue the cumulative minor adverse effects that currently exist due to human activities in the areas managed to protect wilderness characteristics. However, the plan provides for long-term, beneficial effects to these areas through the reduced potential for wildland fire and associated fire-suppression activities, which can cause adverse impacts. Along with the presence of backcountry users, firefighter presence during wildland fire use events and prescribed fires would have a negligible to minor short-term adverse cumulative effect. Aircraft overflights associated with fire management activities and other administrative and commercial uses may temporarily detract from user experience. Reasonably foreseeable future actions would be anticipated to contribute minor to moderate cumulative effects on wilderness characteristics long-term, as fire is restored as a natural disturbance event across the landscape and increasingly offsets effects associated with non-fire related activities. Overall, impacts of actions combined with impacts of other actions that could affect lands with wilderness characteristics, would result in negligible to minor, short-term, adverse, cumulative impacts and minor to moderate long-term beneficial effects.

Mitigation: To mitigate potential adverse effects from implementing the NWCFMP on LWCs, the plan will be carried out under the design features discussed in Section 2.2.2 above. In addition, all fire management activities affecting lands with wilderness characteristics areas would be consistent with the minimum requirement concept. This concept is a documented process used to determine if administrative activities effecting wilderness characteristics or the visitor experience are necessary and how to minimize impacts. The minimum requirement concept would be applied as a two-step process that determines (1) whether or not the proposed fire management action is appropriate or necessary for administration of the area as lands with wilderness characteristics and does not pose a significant impact to naturalness, and outstanding opportunities for primitive recreation and solitude; and (2) the techniques and type of equipment needed to ensure that impact to wilderness characteristics is minimized.



### **3.4.3 Native American Concerns**

Affected Environment: Tribes that inhabited the Little Snake Field Area in historic times include the Utes and the Shoshone. On May 8, 2014, letters seeking input were sent to the three branches of the Utes (in Ft. Duchesne, Utah; Ignacio, Colorado; and Towaoc, Colorado) and to the Eastern Shoshone (in Ft. Washakie, Wyoming). No comments were received.

Other consultation efforts have shown that the historic tribes of the LSFA are particularly concerned about certain kinds of sites. Included are burials, rock art sites, and wickiups.

Environmental Consequences, Proposed Action: The proposed action is expected to have little potential to affect sites that are of particular concern to the historic tribes. Statements were added to the narratives for specific polygons to provide for avoiding the use of fire retardant along cliffs in polygons where rock art is known to occur. Statements were also added to verbiage on individual polygons to provide for the protection of specific wickiup sites. Wickiup sites are rare; therefore, particular wildfires that are allowed to burn in old-growth pinyon and juniper woodlands have a small probability of burning unrecorded wickiups.

Environmental Consequences, No Action Alternative: Because the proposed action would result in more acreage burned by wildfire for the benefit of natural resources, the no action alternative is expected to have slightly fewer environmental consequences for Native American concerns. Wickiups are found in old-growth pinyon-juniper woodlands. Under the proposed alternative, more wildfires in old-growth pinyon and juniper woodlands would be allowed to burn which would result in a slightly higher probability that wickiup sites could be inadvertently destroyed.

Environmental Consequences, Cumulative Impacts: Wickiups are rare and susceptible to destruction from fire. Fire is a natural process that has likely destroyed wickiups in the past. The proposed action will increase the acreage of old-growth pinyon-juniper woodlands that are allowed to burn. Therefore, it is expected that the proposed action will somewhat increase the cumulative impact to this rare site type resulting from past, present, and future wildfires.

Mitigation: As discussed in Section 3.4.1, modified Class III surveys to specifically identify and record wickiups will generally be performed in prescribed burns planned for old-growth pinyon-juniper woodlands. Measures to protect specific, known wickiup sites from wildfires are provided for in the discussion of the specific polygons.

Mitigation of potential adverse effects on rock art from the proposed action are also incorporated into polygon specific comments. For those polygons with known rock art sites, precautions to avoid affecting rock art are to be taken during aerial application of fire retardant along cliffs.

### **3.4.4 Paleontological Resources**

Affected Environment: The BLM has implemented a Potential Fossil Yield Classification (PFYC) system for classifying paleontological resources on public lands. Under the PFYC system geologic units are classified from Class 1 to Class 5 based on the relative abundance of

vertebrate fossils or uncommon invertebrate or plant fossils and their sensitivity to adverse impacts. A higher classification number indicates a higher fossil yield potential and greater sensitivity to adverse impacts. The Proposed Action occurs in areas that contain portions of geological formations known to produce a range of fossils, from few scientifically valuable fossils to several scientifically valuable fossils, resulting in PFYCs from Class 1 to Class 5. Areas of PFYC Class 4 and Class 5 with exposed bedrock outcrops, or that are devoid of thick soils and vegetation would be the most sensitive to adverse impacts from the proposed action. Within the area of the Proposed Action there are approximately 1.8 million acres of PFYC Class 5. Grazing, oil and gas development, fire, mining, and recreation are the past and current actions within the boundary of the Proposed Action.

Environmental Consequences, Proposed Action: Ground disturbing fire suppression methods that use heavy equipment and hand tools could damage or destroy surface paleontological resources. Loss of vegetation due to firefighting methods would increase erosion and could expose scientifically valuable fossils to weathering and erosion. Beneficial impacts could result by the discovery of scientifically valuable fossils that could be uncovered by increased erosion and vegetation loss. Most areas throughout the area of the Proposed Action with paleontological resources present at the surface would not be conducive to the ignition or spread of wildland fires, or would not be conducive to supporting significant vegetation.

Environmental Consequences, No Action Alternative: Fossils would not be damaged by ground disturbance caused by fire suppression methods. Loss of vegetation due to fires that aren't suppressed could increase erosion and could expose scientifically valuable fossils to weathering and erosion.

Environmental Consequences, Cumulative Impacts: The area for cumulative impact analysis is the 1.8 million acres designated as PFYC Class 5. Surface disturbing activities within this area have the potential to damage these fragile, nonrenewable resources. However, existing laws, regulations and policies provide the opportunity to mitigate adverse effect of federal activities through avoidance or collection of specimens and data. The 1.8 million acres of PFYC 5 would not be conducive to either the ignition or spread of wildland fires and therefore it is unlikely that surface disturbance caused by fire suppression would damage the paleontological resource. Beneficial effects could result if scientifically significant fossils were discovered during fire suppression activities.

Mitigation: None

### **3.4.7 Visual Resources**

Affected Environment: Visual resources are the visible physical features of a landscape to which concerned or visually sensitive publics assign scenic value. Scenic values in the LSFO have been inventoried as Visual Resource Inventory (VRI) conditions, and VRM objectives were established in the LSFO RMP. VRM objectives corresponding to the various management classes provide standards for analyzing compliance with RMP VRM objectives. Projects are evaluated using the Contract Rating System to determine if it meets VRM objectives established

by the RMP. VRI conditions, supplemented by site and area analyses of proposed actions, are the basis for evaluating the effects of proposed projects on the human environment.

The VRM system is composed of four Visual Resource Inventory (VRI) classes that were mapped by overlaying scenic quality, sensitivity levels, and distance zones. The majority of the Little Snake Field Office, approximately 46.2 percent was designated as VRI Class IV. Areas designated as Class II or Class III are generally found across the eastern and western sections of the field office and are often closely aligned. VRI Class II accounts for approximately 23.2 percent of the field office, while VRI Class III accounts for approximately 28.2 percent. The remaining 2.4 percent of the field office is designated as VRI Class I. (Logan Simpson Design Inc. 2011).

- **Class I Objective:** The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- **Class II Objective:** The objective to this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **Class III Objective:** The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- **Class IV Objective:** The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

**Environmental Consequences, both alternatives:** The vegetation management activities likely to occur at recommended treatment areas within the Planning Area would consist of a number of various methods, including prescribed, natural, mechanical, and chemical treatment. Because vegetative cover comprising the Planning Area varies significantly, the likelihood of any one management activity occurring over a sufficiently large area to substantially adversely affect visual quality is minimal.

Prescribed burns have the potential to temporarily but adversely impact visual quality or character of a mountainside, but would also have the potential to substantially improve visual quality by removing younger specimens within the understory and thinning the density of tree stands and brush-laden areas. Prescribed burns also provide the beneficial impacts of promoting new growth, particularly native grass, forbs, and wildflowers.

Prescribed burns would, however, produce smoke that may temporarily block distant vistas due to reduced visibility. This impact is reduced by existing fire management and prescribed burning policies, guidelines, and regulations that stipulate when and under what conditions prescribed burns can occur and would occur only over a short period of time. By only conducting prescribed burns during those periods when conditions are optimal, and by conducting all pre-burn actions according to the accepted guidelines and regulations in place, the amount of smoke produced during prescribed burns, the length of time views are impacted, and the potential for substantial adverse effects on scenic vistas would be reduced to a less-than-significant level. Further, the execution of prescribed burns requires a high level of resources, sufficient to limit their simultaneous conduct over areas large enough to create visual uniformity in the landscape or vista. By only burning part of the Planning Area or recommended treatment area at one time, aesthetic values can be maintained. Potential impacts that may result from smoke produced during prescribed burns are further mitigated by implementation of the following best management practices (BMPs).

Natural wildland fires, especially large severe fires, change the landscape in a way that degrades visual quality, especially on fragile soils and forestlands where the duration of impacts is also longer. The use of heavy equipment to blade fire lines and the use of staging areas leave lasting visual scars that degrade the visual quality. The landscape may be blackened until vegetation is reestablished.

Full suppression could change the landscape to clearly appear altered by man. For example, a bladed fire line may create a visual contrast that makes human intervention apparent. For lands managed for Wilderness Characteristics, this would impact the management objective to protect naturalness in "...whether or not an area looks natural to the average visitor who is not familiar with the biological composition of natural ecosystems versus human-affected ecosystems."

Potential visual effects from a severe wildland fire may include loss of living timber, blackening the landscape, and blackened deadfall and the smoke from fires degrades air quality, visual quality, and recreational experiences.

Short-term adverse visual impacts would be associated with mechanical and chemical treatments. For example, thinning hazardous forest fuels would change the visual character of the forest viewshed. Slash piles would create short-term visual impacts until piles are burned and the burned spots are seeded. These treatments would reduce the potential for negative long-term visual impacts associated with a stand-replacement fire. Measures such as feathered fuel breaks and treating areas in a mosaic pattern would help reduce visual impact of reducing hazardous fuels by thinning forestlands or using prescribed burns.

Treatments anticipated with both alternatives would help reduce the risks of wildland fire impacts.

Environmental Consequences, Cumulative Impacts: Past and present fuel reduction projects in the Planning Area have resulted in visual impacts that can be seen by viewers. The I Do fire, a lightning-caused wildfire burned over 15,000 acres of public and private land, creating a visual contrast that will last until new vegetation has re-established itself. The Proposed Action would create visual impacts until the disturbed land has successfully reclaimed.

Other management efforts within and outside the Planning Area boundaries could produce long-term cumulative impacts on visual resources. Reasonably foreseeable future actions could have adverse impacts on visual resources. Impacts would be caused by surface disturbance from burning, cutting, fire lines, and vehicle use.

Specific actions would be required to conform to an area's VRM Class objectives through BMPs and the Minimum Requirement concept, which would prevent cumulative impacts on visual resources from becoming significant.

Mitigation: None. While implementation of the guidelines and actions included in this EA would reduce the severity of this temporary visual impact to the scenic character of the Planning Area and scenic resources, no additional feasible mitigation measures are available. Therefore, while this impact is temporary over time, it remains unavoidable.

Any specific projects undertaken as part of implementing this Environmental Assessment would include additional environmental analyses to determine project-specific impacts to visual resources, including any potential conflicts with policies and guidance, and additional mitigation measures applied as needed.

## **3.5 RESOURCE USES**

### **3.5.1 Access and Transportation**

Affected Environment: This FMP covers all public lands managed by the Little Snake Field Office as related to access and transportation. FLPMA provides for recreational use of public land as part of multiple use management. Dispersed, unstructured activities typify transportation use occurring on most public land, and are regularly related to recreational activities or firewood gathering. Recreational activities include motorized touring, big and small game hunting, backpacking, horseback riding, hiking, mountain bike use, sightseeing, pleasure driving, and OHV use. The Serviceberry and Fly Creek SRMA's (Special Management Area's) are of high quality big game habitat. Travel restrictions in these areas are in place to adequately protect natural resources on public land, minimize conflicts with other uses, prevent trespass problems and ensure public safety.

Environmental Consequences, both alternatives: Due to a natural fire event, the development of new roads or dozer lines within a travel restricted or non-restricted and SRMA's might promote

future unauthorized use, consequently impacting environmental values such as wildlife, cultural and paleontological resources. The possibility of displacing the general public and or recreation permit holder's transportation needs over a long or short duration period during a wildfire could impact other users or resources negatively, pending values, goals and the way wildfire is managed. Special consideration for new route proliferation or motorized line construction during a wildfire will be given to the SRMA's mentioned above.

Environmental Consequences, Cumulative Impacts: The development of new routes or dozer lines that are not rehabilitated after a wildfire coupled with the public utilizing the newly created routes, thus creating additional routes will consequently impact transportation management and other resources.

Mitigation: None

### 3.5.3 Forest Management

#### Affected Environment:

**Ponderosa Pine:** Ponderosa pine occurs on the higher elevations of Douglas Mountain in the C2 polygon. It is often interspersed with pinyon/juniper, mountain mahogany, sagebrush, serviceberry, bitterbrush, and snowberry. These stands occupy approximately 12,400 acres, and grow between 7,000 and 8,600 feet in elevation. Sites on which ponderosa pine grows in the area are typically very marginal for the species, with very low site indices. They are typically at the lower end of the species' precipitation range. Soils are extremely rocky and very shallow, with trees often growing out of cracks in the sandstone. The resulting stands are very open, with trees often 300 to 500 years old. These stands exhibit poor vigor and are susceptible to mountain pine beetle attack and in many cases are being encroached upon by pinyon and juniper.

**Lodgepole Pine:** Lodgepole pine occupies approximately 5000 acres within the C3 polygon on Diamond Peak and Middle Mountain at elevations between 8200' and 9500'. There are also small stands in the very eastern portion of the planning area. The species does not grow well on drier southerly aspects except at higher elevations. Soils are very shallow and rocky where site indices are typically very low. In general, sites are marginal for the species, with some areas occupied by a mix of lodgepole pine, subalpine fir, aspen, mountain big sage, service berry, snowberry, manzanita, wild rose, common juniper, limber pine, and mountain mahogany. The lodgepole pine occurs in dense, even age stands which exhibit evidence of past fires 125 to 175 years ago, with numerous small fires occurring since. These smaller fires have created small, dense patches or "dog-hair" stands, often less than five acres in size, interspersed with older stands, 20 to 40 acres in size.

The mountain pine beetle epidemic of the last 10 years which decimated much of the west's lodgepole pine only resulted in about a 5% - 10% mortality rate on Diamond Peak and Middle Mountain, which is interesting given the poor site conditions. The mortality rate was much higher in the eastern portion of the planning area.

**Aspen:** Cold Spring Mountain (C7 polygon) has the largest amount of aspen in the planning area. Aspen also occurs on and around Diamond Peak, Middle Mountain, the Danforth Hills, and to a lesser degree Douglas Mountain and the eastern portion of the planning area. Total aspen coverage for the planning area is less than 3000 acres. Most of the aspen stands are in a declining state due to lack of disturbance and heavy browsing by elk, deer, and livestock. Many stands have an understory of common juniper and limited aspen regeneration. Again, as for other forest species, sites are typically very marginal for occurrence of the species.

**Pinyon/juniper:** Juniper and Pinyon/juniper stands make up a significant part of the vegetation in the planning area. About 127,000 acres total occur on BLM lands primarily in the western third of the planning area. These two tree species are often referred to together, but because of the combination of soils, elevation, precipitation, and topography, Utah juniper is by far the dominant species in this plant association. Only on the south slope of Cold Spring Mountain, the Disappointment Draw area, and the Diamond Breaks WSA area does pinyon make up measurable part of what is commonly referred to as pinyon/juniper woodlands. Given the same precipitation and elevation, pinyon typically occurs on shallow well drained, rocky soils, and northerly aspects. Juniper typically occurs on drier southerly aspects and on deeper heavier soils containing more clay and less available moisture. The result is that juniper is often found in association with sagebrush along the edges of valley bottoms.

**Forest Products:** There is currently little commercial demand for forest products in the Little Snake Field Office. This is due to the low quality of timber and the remoteness of potential timber stands. Firewood, Christmas trees, and to lesser degree, post and poles are the forest products utilized by individuals. Demand for these products is also relatively low with an average of 80 permits issued annually for these products. As a result, overall forest health and ecosystem diversity rather than forest products is the main goal of the forestry program

#### Environmental Consequences, Proposed Action:

**Ponderosa Pine:** The proposed alternative allows for more opportunities to allow fires to burn for resource benefit in the polygon containing ponderosa pine. In some areas of Douglas Mountain, mountain shrub species, sagebrush, and pinyon/juniper are increasing in the understory of ponderosa stands; thereby increasing potential fire behavior and ponderosa mortality from fire. However, in most areas, canopy bulk density is not high enough to result in complete ponderosa mortality. Fires on Douglas Mountain in the past 25 years have demonstrated this. Fire could still be beneficial in these areas by removing competition and providing a suitable seed bed for ponderosa regeneration. Past fires have also shown that the very old trees (>250 years old) and younger smaller trees are most likely to be killed in moderate to high intensity fire. The discontinuous nature of the ponderosa stands makes a large catastrophic fire unlikely except in the most extreme conditions.

Fuels reduction treatments that target ladder fuels and encroaching species should reduce the chances of significant ponderosa mortality and result in healthier, more vigorous stands of

ponderosa pine. Prescribed fire treatments of low to moderate intensity should reduce competition for moderate to older trees and provide the mineral soil needed for seedling establishment.

**Lodgepole Pine:** Lodgepole pine tends to form dense even aged stands that are prone to infrequent (75-200 years) high-intensity crown fires. It is a fire-dependent species that needs the heat of fire to open its cones and release the seeds. Seedling establishment in the C3 polygon following fire takes longer than is typical of more productive lodgepole sites, but does eventually occur (10 -15 years versus 2 – 5 years). The proposed action allows for more flexibility in managing fires in the C3 polygon for resource benefit rather than strictly full suppression. Even though this is a low fire occurrence area, this increases the potential for larger fires. The result would be short term reductions in lodgepole coverage but improved long term forest health through improved nutrient cycling and seedling establishment in burned areas. Lodgepole pine in the C3 polygon is separated into two distinct areas, so the likelihood of a wildfire burning the entire extent is unlikely.

Fuels reduction treatments of smaller tracts would also improve the overall health of the forest by creating a mosaic of lodgepole age classes. Since young stands of lodgepole are typically less flammable than mature stands, this would lessen the chances of a large fire from removing all the lodgepole in one area.

**Pinyon/Juniper:** The C and D polygons contain the majority of the pinyon/juniper, and therefore, the most potential effects from fire. Additionally, most fires in the planning area occur in the pinyon/juniper woodlands. Under this alternative, more acreage is available for multiple objectives management of fires including resource benefit.

Pinyon/juniper fires of greater than 30 acres typically occur infrequently (200 – 400 years) but with high intensity resulting in nearly total mortality of the two species within the burned area. An exception to this is areas where pinyon/juniper is encroaching into more productive sagebrush sites, where fire may be more frequent but is still of high intensity. Re-establishment of pinyon/juniper following fire in the Little Snake Field Office is very slow; taking up to 75 – 100 years before the area would be considered a forested site.

Allowing managed fires in pinyon/juniper woodlands would break up fuel continuity and create a mosaic of age classes and potentially reduce the chances of large catastrophic fires. Because it takes relatively extreme conditions for pinyon/juniper fires to significantly spread, fires in this fuel type must be allowed to burn under relatively extreme conditions in order to have any appreciable effect on annual burned acreage. Though not a forestry issue, pinyon/juniper stands with little understory vegetation is susceptible to weed infestation following fire if the burned area is not seeded afterward.

**Aspen:** Many of the aspen stands on Cold Springs and Middle Mountain have an understory of common juniper, which would significantly increase fire intensity and aspen mortality. Since aspen is a disturbance dependent species, fire helps to propagate the species. Prescribed burning on Cold Spring Mt. has demonstrated that aspen does re-sprout



despite increased fire intensity. However, the burned area should be protected from livestock and wildlife browsing in order for the sprouting trees to survive. This would be mitigated somewhat if a large enough area of aspen burned in order to reduce the browsing pressure on any one area.

Vegetation treatments in aspen that reduce encroaching conifers and shrubs, or promote sprouting will be beneficial to the over health and vigor of the species.

Mitigation: In the event of wildfires burning more than 50% of the existing lodgepole in the C3 polygon, an interdisciplinary team will re-evaluate the continued management of the polygon. Options may include changing to more suppression oriented management or continuing to allow flexibility in allowing fires to burn for resource benefit.

If possible, fires or vegetation treatments in aspen stands of less than 50 acres in the C7 and C3 polygons should be protected from wildlife and livestock for 5 years.

Environmental Consequences, No Action: As noted, the limited commercial and personal use of forest products would continue in much the same manner under either alternative. The basic effects and short term implications of fire is essentially the same with either alternative; however the amount of burned woodlands should be less under the no action alternative. By continuing with primarily full suppression in the ponderosa pine, lodgepole pine, and aspen forests, short term losses may be reduced; however long term forest health will suffer with increased competition from encroaching species and lack of desired tree recruitment. Additionally, the threat of catastrophic or damaging fire increases with each passing year.

Environmental Consequences, Cumulative Impacts: The first effective fire suppression actions on BLM lands in northwest Colorado began sometime around the early 1950s. Suppression actions coupled with other resource uses, such as livestock grazing, occurring since that time has limited the amount of burned acreage that would have occurred naturally. This has resulted in a slow increase in shrubs, smaller trees, litter, and dead/down material in all forest types with the probable exception of pinyon/juniper woodlands. The cumulative effect is that larger more intense fires are possible. Annual and decadal climatic variations are also a major factor in fire size and occurrence. Since the adoption of the first Northwest Colorado Fire Management Plan in 2000 some fires have been allowed to burn for resource benefit. Most of these fires have been in predominately forested fuel types. However, no significant change in annual acres burned is evident.

The proposed alternative allows for more forested areas to have fires managed for resource benefit. If noticeable increases in annual burned acreage do occur, the trend of understory and hazardous fuels build-up will be slowed or reversed and the threat of larger more intense wild fires reduced. If however, competing resource uses and social concerns dictate mostly suppression responses to fires, the cumulative effects will be much the same as is occurring under present management (no action alternative) and the increasing threat of larger and more damaging wild fires will continue.

Mitigation: None

### 3.5.4 Livestock Operations

Affected Environment: There are livestock grazing authorizations covering the vast majority of BLM lands within the planning area. Authorizations for cattle, horses, and sheep permit grazing on public land forage with authorized use occurring somewhere within the planning area each month of the year. Most grazing, however, is authorized during the frost-free growing season months of May through October. Numerous structural improvements that help facilitate livestock management occur throughout, including fences and water developments.

Environmental Consequences, Proposed Action: All fires, whether wild or prescribed, disrupt livestock operations in the short term. The immediate displacement of livestock and damage to range improvements, with fences being the most vulnerable, and the short-term loss of forage can severely disrupt livestock management. The extent to which this occurs is a function of the timing, intensity, and size of the fire. Wildfire in A and B polygons would pose a smaller chance for disruption due to the greater emphasis placed on suppression. Wildfire in C and D polygons has the potential for greater disruption due to the increased likelihood of management of fire for resource benefit, potentially resulting in larger single incidents. The short-term impacts to livestock operations include loss of forage (necessitating the need to quickly find alternative pasture), damaged fences and water facilities such as wells and troughs. Other short-term impacts include disruptions in livestock management for two years or more as burned lands recover necessitating the need to secure leases or other long term arrangements for alternative pasture and costs involved in repairing or replacing damaged improvements. Long-term impacts tend to be beneficial to grazing management as fires the proposed planning area generally result in greatly increased abundance of forage species as many of the planning area's sagebrush-grass plant communities revert to perennial grasslands in the wake of fire.

Disruptive impacts from prescribed fire would be far less as, as part of the planning process, the livestock operator(s) are involved and can plan well in advance for the temporary loss of forage. Additionally, the impact to improvements is generally reduced as they can be identified and protected or avoided ahead of time. Often, the resources objectives for prescribed fire include forage production and land health goals related to sustainable livestock management practices and the overall long-term benefits of prescribed fire are a clear benefit to livestock management.

Non-fire treatments, which typically involve the reduction of woody species such as juniper and sagebrush, would not be as disruptive to livestock operations as fire. These types of treatments usually result in reducing competition with herbaceous species, which directly benefits livestock. Additionally, these treatments usually do not involve the short term removal of herbaceous forage species, so short-term impacts are negligible and, with the exception of seeding, periods of livestock rest are not necessary. Structural improvements are unlikely to be affected by non-fire treatments.

Environmental Consequences, No Action Alternative: The impacts to livestock operations would be very similar to that of the Proposed Action.

Environmental Consequences, Cumulative Impacts: Over the years, the impact of fire and the way it is managed has affected livestock operations. Most of the grazed lands in the proposed

project area are shrublands with perennial grasses that are co-dominant. Within the semi-arid climate, these communities evolved with fire and their overall health depends upon it. The mix of grasses for spring, summer, and fall grazing along with browse for winter forage has resulted in a fire-driven mosaic that allows for a forage base for both livestock and wildlife. In the broadest sense, the suppression of fire results in increases in the abundance of woody species and a decrease in the abundance of herbaceous species over time. Historically, wildfire was more prevalent across the proposed planning area and historic photographs show much less large woody plants such as juniper compared to today. By recognizing fire's role in maintaining the health of these plant communities, both of the alternatives will perpetuate or increase short term impacts from fire, but provide long term benefit to livestock operations.

Mitigation: None

### **3.5.6 Recreation**

Affected Environment: The proposed planning area is a recreation hub which provides a diversity of recreational activities such as camping, equestrian, hiking, OHV enjoyment, site seeing, antler collecting and big game hunting, which is the most likely and popular of the activities listed. Motorized use typically occurs seasonally with primary use during the big game hunting season as the public travels from one point to another. Multiple Special Recreation Permit holders are authorized for Guided Big Game Hunting and Outfitting in the proposed project areas during big game hunting seasons. Special Recreation Management Areas (SRMA) includes Emerald Mountain, Little Yampa Valley, Juniper Mountain, Cedar Mountain, South Sand Wash, Serviceberry, and Fly Creek. Developed campgrounds include Irish Canyon and Rocky Reservoir. There is also a proposed campground (White Rock) in the Little Yampa Canyon area (Duffy) already analyzed and slated for completion.

Environmental Consequences, Proposed Action: Depending on the time of year, the use of managed natural fire would result in displacing dispersed recreation users from the proposed project areas during wildfire or prescribed fire treatments. Contingent on the type of recreational activity and area, this impact may last up to several years after the fire. Fire near dispersed recreation sites and sought after destinations could affect the quality of a visitor's experience due to smoke or out of prescription burned areas. SRMAs are special designated recreational areas that may require additional attention during a wildfire event, however, these areas have not been classified by polygon with the exception of Cedar Mountain, which follows under an A polygon.

Developed recreation sites and campgrounds such as Irish Canyon Interpretive Site, Rocky Reservoir, Irish Canyon and the proposed White Rock campgrounds are or will be of high recreational concern and value if a nearby wildfire event occurs. Though not classified by polygon, special emphasis and consideration should be given to these sites.

Big game species such as elk, pronghorn, bear or deer that are sought after during the big game hunting seasons could temporarily be displaced during a wildfire event, pending time of year. Temporary closures of the prescribed fire areas could also impact Special Recreation Permit holders and hunters associated with big game hunting by preventing access.

Using prescribed fire to create fire breaks could be beneficial in protecting dispersed recreation sites. Consumptive (such as hunting) and non-consumptive (such as wildlife viewing) wildlife activities would be impacted during a wildfire, however treatments would create a positive impact by increasing the quality of wildlife habitat throughout time. In the long-term, vegetative mosaics from managed natural and prescribed fires could enhance the recreational visitor's experience.

Environmental Consequences, No Action: The impacts to recreation would be similar to those for the proposed action except that wildlife habitat would not improve to the same degree and there would be an increase risk to the public because untreated fuel and not existent fuel breaks could create large intensive hot fires. Developed recreation sites and SRMAs could be placed in jeopardy if preventive measures or plans are not in place.

Environmental Consequences, Cumulative Effects: Short term adverse effects from the temporary restriction of recreational activities within the wildfire areas would occur. However, the long term benefits by effectively managing lands with natural fire can impact recreational activities positively.

Mitigation: None

## **3.6 SPECIAL DESIGNATIONS**

### **3.6.1 Wild and Scenic Rivers**

The National Wild and Scenic Rivers (NWSR) Act (PL 90-542 and amendments) Section 1(b) states that "certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations." Section 5(d) requires federal agencies to consider potential wild, scenic, and recreational river areas in all planning for the use and development of water and related land resources. Section 10(a) describes the basic management requirement of protecting and enhancing the values that were the reasons for originally including the river in the NWSR System.

Yampa River Segment 1 (River Mile 126 to Milk Creek - recreational), Yampa River Segment 2 (Milk Creek to Duffy Tunnel – scenic), and Yampa River Segment 3 (Cross Mountain Canyon – Wild) are suitable for inclusion in the NWSR System and cannot be modified, to the extent BLM is authorized under law to control stream impoundments, diversions, or other development. Management actions would only apply to those portions of the river segments where the river corridor is managed by BLM, with specific management prescriptions within 0.25 mile of each side of the river.

Environmental Consequences, Proposed Action: BLM Manual 8351, Wild and Scenic Rivers, states that prescribed fire may be used to maintain or restore ecological conditions or meet

objectives of a river management plan. Management and suppression of fires within the 0.25 mile buffer would follow the same guidelines as suppression on adjacent lands and in a manner which reflects management objective for the specific river segment. In addition, additional efforts would be made for prompt rehabilitation of all control activity generated disturbances, ensuring that suitability of the threatened and endangered fish spawning habitat is maintained, and only designated roads and trails are used; therefore project location might need to be adjusted to avoid impacts.

Environmental Consequences, No Action Alternative: Prescribed fire issues and impacts are addressed by subsequent NEPA analysis on a "project-level" basis.

Environmental Consequences, Cumulative Impacts: The Proposed Action would not add additional impacts or threats to the suitability for wild and scenic river status beyond those that already exist.

Mitigation: None.

### **3.6.2 Wilderness Study Areas**

Affected Environment: The proposed planning area includes seven Wilderness Study Areas (WSAs) totaling 79,662 acres: Cross Mountain, West Cold Springs, Diamond Breaks, Ant Hills, Chew Winter Camp, Peterson Draw, and Vale of Tears. The WSAs areas are located in the Little Snake Field Office resource area in Moffat County in northwestern Colorado. Two areas, West Cold Spring and Diamond Breaks, partially extend into the BLM Vernal Field Office planning area, Daggett County, Utah.

To be designated as a Wilderness Study Area, an area has to have the following characteristics:

- Size - roadless areas of at least 5,000 acres of public lands or of a manageable size;
- Naturalness - generally appears to have been affected primarily by the forces of nature;
- Opportunities - provides outstanding opportunities for solitude or primitive and unconfined types of recreation.

Cross Mountain and Diamond Breaks were studied and recommended by BLM as suitable for wilderness designation under Section 603 of the Federal Land Policy and Management Act (FLPMA) of 1976. West Cold Springs, also studied under Section 603, was not recommended as suitable for wilderness designation. The Dinosaur Adjacent Units, Ant Hills, Chew Winter Camp, Peterson Draw, and Vale of Tears, were also not recommended as suitable for wilderness designation by BLM. However, they are being considered for wilderness designation under Section 202 of the Federal Land Policy and Management Act.

The BLM wilderness suitability recommendations were forwarded through the Secretary of the Interior and the President to the Congress. The environmental impact statement, mineral surveys required by law, and other data was submitted along with these recommendations. Congress will make the final decision as to which areas will be designated as Wilderness. Until these decisions

are made, the WSAs are being managed under BLM's Interim Management Plan guidelines (IMP) which are intended to protect the resource values so as "not to impair the suitability of such areas for preservation as wilderness."

All WSAs are classified as VRM Class I, where the objective is to preserve the existing character of the landscape and any level of change to the characteristic landscape should be very low and must not attract attention.

Environmental Consequences, both Alternatives: Under both alternatives, the IMP would continue to provide guidance for all fire activities within the WSAs. The IMP states that fire management activity plans must specify fire management objectives for each WSA, taking into account the following factors: the existing wilderness characteristics of the area, the need to prevent impairing actions, historic fire occurrence, natural role of fire, proposed degree of suppression, expected fire behavior, acceptable suppression techniques, adequate buffer zones, smoke management, effect on private or other agency inholdings and on adjacent landowners, the limits of acceptable fire weather, fire behavior, fire effects, and the access requirements of other agencies.

In addition to IMP guidelines, the Resource Management Plan and legal and ecological constraints such as air and water quality considerations, threatened or endangered species considerations, cultural considerations, or habitat considerations would continue to provide additional resource protection in managing fire in these natural areas.

IMP guidance also states that fire management procedures and plans must rely on the most effective methods of suppression that are least damaging to wilderness values, other resources, and the environment, while requiring the least expenditure of public funds, including the cost of rehabilitating the area. Although the IMP allows for the use of power tools, aircraft, motorboats, and motorized fire-fighting equipment, the LSFO's existing and proposed strategy is to limit motorized equipment in WSAs.

Under the proposed action, there would be no significant impacts on wilderness values within the WSAs. However, the proposed action would result in maintaining those values overall. The new fire management policy, which allows managers to use some wildland fires to meet fire management and other resource objectives, does not conflict with the IMP guidelines that require managers to provide maximum protection for the areas' wilderness characteristics.

Even in the event that managers decide to suppress a wildland fire, the suppression constraints that apply to these areas, such as limited motorized equipment use in WSAs, would protect these areas from potential vehicle damage. Such suppression constraints may result in longer and/or more costly periods of fire suppression activity because fire crews may be unable to reach areas except by foot, horseback, or other non-motorized means.

Implementation of the proposed action would result in short-term, negligible to minor, adverse impacts to wilderness values due to the presence of work crews, the additional noise associated with fire use and firefighting activities, and the potential use of mechanized tools in or bordering wilderness. The effects to wilderness character would be moderate and beneficial due to the

reduction in fuel loads, which would reduce the risk of catastrophic wildland fire. Analysis of minimum tool requirements would be used in all wilderness areas to keep adverse impacts to minimal levels. Aircraft overflights associated with fire management activities and other administrative and commercial uses may temporarily detract from user experience.

**Environmental Consequences, Cumulative Impacts:** Reasonably foreseeable future actions would be anticipated to contribute minor to moderate cumulative effects on wilderness character long-term, as fire is restored as a natural disturbance event across the landscape and increasingly offsets effects associated with non-fire related activities. Overall, there would be very little difference in impacts on wilderness and wilderness values anticipated between the two alternatives at this level of planning. The guidelines, regulations, and policies are established and must be followed. Analysis of the impacts would be determined in any project-level analysis.

**Mitigation:** To mitigate potential adverse effects from implementing the NWCFMP on WSAs, the plan will be carried out under the design features discussed in Section 2.2.2 above. All fire management activities affecting wilderness study areas would be consistent with the minimum requirement concept. This concept is a documented process used to determine if administrative activities effecting wilderness resources or the visitor experience are necessary and how to minimize impacts. The minimum requirement concept would be applied as a two-step process that determines (1) whether or not the proposed fire management action is appropriate or necessary for administration of the area as WSA and does not pose a significant impact to wilderness resources and character; and (2) the techniques and type of equipment needed to ensure that impact to wilderness resources and character is minimized.

## **CHAPTER 4– PUBLIC LAND HEALTH STANDARDS**

### **4.1 INTRODUCTION**

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All landscapes with the LSFO were assessed for compliance with the Colorado Standards of Public Land Health by an interdisciplinary team consisting of various resource specialists that typically included rangeland management specialists, wildlife biologists, and soil/water/air specialists between 1998 and 2009.

### **4.2 COLORADO PUBLIC LAND HEALTH STANDARDS**

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In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands.

**4.2.1 Standard 1** Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Finding of most recent assessment: All landscapes assessed in the LSFO are meeting this standard with only isolated concerns encountered.

Proposed Action: In general, wildfire and other activities that reduce the cover of woody species in favor of herbaceous species would maintain and/or improve the overall stability of soils and reduce accelerated erosion. The implementation of best practices in preventing or

reducing localized impacts from suppression activities would further help ensure that this standard is maintained.

No Action Alternative: This alternative would not preclude this standard from being met, but localized impacts such as accelerated erosion in conjunction with suppression activities would persist.

**4.2.2 Standard 2** Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.

Finding of most recent assessment: Most landscapes are not meeting this standard due to riparian systems that are functioning-at-risk.

Proposed Action and No Action Alternative: Wildfire and fuels management and planning primarily impact uplands. Management activities would not preclude riparian areas that are at proper functioning condition from continuing to be met and or non-functional or functional-at-risk areas from improving.

**4.2.3 Standard 3** Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.

Finding of most recent assessment: Plant communities in the LSFO are in varying seral stages, with some areas meeting this standard and some failing. Indicators that show that areas are not meeting this standard include weed infestations and lack of perennial grasses and forbs.

Proposed Action: The Proposed Action would not preclude this standard from being met. Areas that are currently meeting this standard would likely continue to meet it. Since most of these plant communities are to varying degrees dependent upon fire as a part of the evolved community dynamic, this alternative has the potential to improve areas that are currently failing this standard. The implementation of design features in suppression and post-fire management would greatly reduce any potential fire related impacts that could exasperate existing failing conditions and help ensure that any adverse effects from fire, fire suppression, and fuels management are minimized.

No Action Alternative: This alternative would also not preclude this standard from being met, but the lack of the design features introduced by the Proposed Action would reduce the effectiveness of fire and fuels management under this alternative in improving areas that are currently failing this standard.

**4.2.4 Standard 4** Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Finding of most recent assessment: Plant communities in the LSFO that provide habitat for special status species are in varying conditions, with some areas meeting this standard and some failing this standard.

Proposed Action: The Proposed Action would not preclude this standard from being met. Areas that are currently meeting this standard would likely continue to meet it. Since most of these plant communities are to varying degrees dependent upon fire as a part of the evolved



community dynamic, this alternative has the potential to improve areas that are currently failing this standard.

No Action Alternative: The No Action alternative would not preclude this standard from being met.

**4.2.5 Standard 5** The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.

Finding of most recent assessment: Water bodies in the LSFO are in varying conditions, with some areas meeting this standard and some failing this standard. There are several miles of 303(d)-listed streams in the planning area.

Proposed Action: The Proposed Action would not preclude this standard from being met. Water bodies that are currently meeting this standard would likely continue to meet it. This alternative would likely promote incremental improvement to water bodies not currently meeting this standard because it utilizes fuels management and fire suppression as necessary to avoid large, severe wildland fires, which can create poor conditions in water bodies downstream of burned areas.

No Action Alternative: The No Action alternative would not preclude this standard from being met.

## **CHAPTER 5- CONSULTATION AND COORDINATION**

### **5.1 TRIBES, AGENCIES, AND INDIVIDUALS**

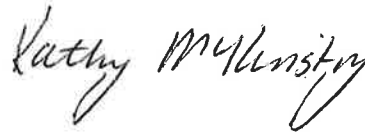
During development of the EA, notification letters were sent to Ute Indian Tribe (Unitah and Ouray Reservation), Eastern Shoshone Tribe (Wind River Reservation), Southern Ute Indian Tribe, and Ute Mountain Ute Tribe of the proposed changes to the FMP EA.

FWS Browns Park Refuge was consulted during the preparation of this EA for fire management and environmental concerns on the Refuge.

The BLM LSFO NEPA Interdisciplinary Team, BLM White River Field Office Oil and Gas Petroleum Engineers, were the participants and preparers of this EA.

**SIGNATURE OF PREPARER: Ron Simpson**

**SIGNATURE OF ENVIRONMENTAL REVIEWER:**



**DATE SIGNED:** 1/21/16